Medical Lib
APR 22 1932

This Issue Exceeds 89,000 Copies

THE JOURNAL

OF THE

American Medical Association

Subscription, $7.00 | PUBLISHED WEEKLY | Single Copies, 25 Cents

VOLUME 98, No. 18 | 535 North Dearborn Street, CHICAGO, ILL. | APRIL 30, 1932

CONTENTS AND SUBJECT INDEX

Eczema or Dermatitis: The Problem of Hypersusceptibility. H. N. Cole, M.D., Cleveland.....1521

Addison's Disease Treated with Suprarenal Cortical Hormone (Swingle-Pfiffner). George A. Harrop, Jr., M.D., and Albert Weinstein, M.D., with the Clinical Assistance of Arthur Marlow, M.D., Baltimore.....1525

The Intracarotid Treatment of Meningitis: Experiences with Pregl's Solution of Iodine: A Further Report. Albert S. Crawford, M.D., Detroit 1531

The Muscle Factor in Adolescent Scoliosis. Emil Hauser, M.D., Chicago 1535

Vital Function Studies: IX. Failure of Hearing in the Young: A Study of a Rural Community. Allan Winter Rowe, Ph.D., and Dana W. Drury, M.D., Boston.....1539

The Spontaneous Closure of Fresh Urethrorectal Fistula: Report of Three Cases, with Presentation of a Manometer Suprapubic Urinary Drainage Apparatus. Edwin Davis, M.D., Omaha.....1542

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Urinary Retention Due to the Use of Ephedrine. Ray M. Balyeat, M.D., and Herbert J. Rinkel, M.D., Oklahoma City.....1545

Otogenous Tetanus. J. M. Bishop, M.D.; R. H. DuBose, M.D., and Fred E. Hamlin, M.D., Roanoke, Va. 1546

Postoperative Epiploitis with Abscess. Max Thorek, M.D., and Philip Thorek, M.D., Chicago.1548

Diabetes Mellitus Appearing in a Child Within One Month After Recovery from Acute Poliomyelitis. E. R. Blaisdell, M.D., Portland, Me.....1549

SPECIAL ARTICLE

Typhoid in the Large Cities of the United States in 1931: Twentieth Annual Report.....1550

COUNCIL ON PHYSICAL THERAPY

Ultraviolet Therapy in Dermatology. George M. MacKee, M.D., New York 1553

CHEMICAL LABORATORY 1561

Montgomery Ward & Co. Undertakes Urine Examining Service

COMMITTEE ON FOODS 1563

EDITORIALS

Child Health Day.....1564

Nonprotein Allergy.....1564

Public Health in New York....1565

CURRENT COMMENT

The Menace of the Cat.....1566

Mail Order Urine Tests.....1566

Elliptic Erythrocytes.....1566

(Subject Index on next page)

ASSOCIATION NEWS 1567

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Sec. 1103, Act. of Oct. 3, 1917, authorized on June 14, 1918. If undeliverable, forwarding and return postage is guaranteed.

Copyright, 1932, by the American Medical Association.

NEXT ANNUAL SESSION, NEW ORLEANS, LA., May 9-13, 1932

It strikes a new note

CAMPBELL'S ORTHOPEDIC SURGERY

Here is a book that strikes a new note in the presentation of orthopedics. It robs the subject of many of its traditional difficulties. It is practical from beginning to end. It is a marvel of simplicity. It is comprehensive, including a full discussion of fractures and dislocations.

A special chapter is given over to *orthopedic examination,* outlining a logical and effective system for examining each member or part, and including a presentation of the normal.

Treatment is presented with a clarity and a simplicity rarely found in books on this subject. This book is not a catalogue of methods but rather a *definite detailing* of the technic of methods which Dr. Campbell has himself found of value in orthopedic *practice.* There is included not only the operative interference of the knife, but also the use of *mechanical methods.* Here Dr. Campbell stresses in text and illustration, the great importance of properly constructed and intelligently applied apparatus. Every form of treatment which gives promise of result is included—heliotherapy, actinotherapy, marine treatment, exercises, and other non-operative methods as well as operative interference.

Octavo volume of 705 pages, with 507 illustrations. By WILLIS C. CAMPBELL, M.D., F.A.C.S., Professor of Orthopedic Surgery, University of Tennessee. Cloth, $8.50 net

ANOTHER SAUNDERS BOOK on PAGE 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

A. M. A. Annual Congress on Medical Education 1567
golf tournament, New Orleans 1567
Abortion, attitude of women physicians 1580
therapeutic, in leukemia ab-1603
Accidents, fatal, necropsies in 1579
Addison's Disease, suprarenal cortical hormone for *1525
Alcohol, disuse in fevers 1578
French Academy approves restrictions ... 1579
Allergy, nonprotein E-1564
American Board of Obstetrics and Gynecology certification ab-1568
Anemia, bothriocephalus ab-1599
of new-born ab-1594
with infection ab-1593
Angina, septicemia after ab-1608
Angiomas, multiple disseminated ab-1597
Appendix, action against surgeon for not removing 1578
Arsphenamines, reactions after ab-1595
phenolsulphonphthalein excretion after ab-1595
Association News **1567**
Automobiles, physician's: exemption from execution Ml-1592

Bacteriophage, killing of bacteria by ab-1600
Berlin Urologic Society, 20th anniversary .. 1580
Biggs Memorial Lecture 1575
Bladder, infected, danger in puncture of ab-1603
tumors, treating ab-1600
Blindness, prevention, annual report on 1576
Blood circulation time ab-1607
ketonemia ab-1604
pressure increase and kidney ab-1605
Book Notices **1589**
Books Received ..... **Adv. page 33**
Brain emulsion, injection ab-1601
Bronchitis, ether for ab-1606
Bronchus obstruction, aerodynamics ab-1598
Bureau of Investigation **1584**

Cancer program, five-year 1575
Carbon Monoxide poisoning, acute and chronic ab-1599
poisoning, psychic sequels ab-1607
Cat, menace of E-1566
Cephalosporiosis ab-1597
Cesarean Section ab-1594
with Portes' operation ab-1603
Chemical Laboratory **1561**
Children, dependent, mortality 1578
handicapped, millions of 1577
Cholesterol problem ab-1608
Cinchophen 1588
Clinical Medicine, teaching ab-1571
Committee on Foods **1563**
Correspondence **1585**
Council on Medical Education **1589**
Council on Physical Therapy **1553**
Creatine and creatinine, excretion ab-1593
Crime, Adler on 1580

Deaths **1582**
Dermatitis, problem of hypersusceptibility. *1521
Dermatology, irradiation of spinal region. ab-1597
physical therapy in ab-1596
short waves in ab-1603
Diabetes Mellitus after recovery from acute poliomyelitis *1549
Diarrhea, acute, sugar for ab-1606
Diphtheria bacillus, coccal forms ab-1600
immunization, Ramon's toxoid ab-1604
toxic ab-1602

Ear, otogenous tetanus *1546
Eclampsia, late sequelae ab-1594
Eczema, hypersusceptibility problem *1521
cellophane protective device ab-1594
recurring, in postoffice workers 1586
Encephalitis, muscular rigidity after 1587
Ephedrine, urinary retention after using .. *1545
compatible with silver preparations? 1588
Epinephrine incompatible with neosilvol? .. 1588
Epiploitis, postoperative, with abscess *1548
Erythrocytes, elliptic E-1566
Erythrol tetranitrate 1588
Eugenics, Netherlands Federation of 1582

Fetus, death, roentgen diagnosis ab-1605
First Aid, plan organized by Red Cross ... 1582
Fistula, urethrorectal, spontaneous closure. *1542
vesico-adnexal ab-1603
Foreign Letters **1577**

Gingivitis ab-1599
Goiter, exophthalmic, with low basal metabolic rate ab-1608

Hanna Lecture 1575
Health, Child Health Day E-1564
public, in New York State E-1565
Hearing, failure of, in young *1539
Heart size vs. cardiovascular efficiency. ab-1601
Hernia, intra-abdominal method of removing ab-1598
Homatropine, idiosyncrasy to 1588

Intussusception, treatment ab-1598

Leprosarium, national, report of 1577
Leukemia, indication for abortion ab-1603
Liver, roentgen study with thorium dioxide preparation ab-1604
Lungs, abscess, bacteriology ab-1597
Lupus erythematosus ab-1597

Maggot treatment of osteomyelitis C-1585; C-1586
Malpractice: limitation of action; concealment of cause Ml-1592
Marriage, prenuptial certificate, France 1579
Marriages **1582**
Masturbation, persistent 1587
Medical Education, reform of 1577
Medicolegal **1592**
Meetings, Coming Meetings **1592**
Meningitis, intracarotid treatment *1531
Mitral stenosis, hemoptysis initial symptom ab-1608
Montgomery Ward & Co. urine examining service 1561; E-1566
Muscle factor in adolescent scoliosis *1535

Neosilvol incompatible with adrenalin? 1588
New York State Health Commission, report E-1565
News **1573**
Nurses, 8-hour day refused 1578

Obstetricians, certification ab-1568
Osteomyelitis, maggot treatment. C-1585; C-1586

Pain, referred ab-1602
referred, of ureteral origin ab-1595
Pelvis, narrow, diagnosis ab-1605
Peptic Ulcer, natural history of duodenal ab-1602
Perichondritis, acute, of laryngeal cartilage ab-1606
Peritonitis, hyperleukocytic pre-immunity. ab-1598
Phenobarbital 1588
Photographers' dermatitis ab-1606
Poliomyelitis, acute, diabetes after *1549
Postoffice workers, occupational hazards ... 1586
Pregnancy, extra-uterine, calcified and retained ab-1594
malaria in, effect of quinine ab-1608
normal, thyroid activity in ab-1594
Psoriasis, actinotherapy ab-1603
Puerperium, sugar metabolism in ab-1605
Pyodermias, bacteriophage for ab-1597

Queries and Minor Notes **1586**
Quinine, idiosyncrasy to ab-1603

Radio Program **1567**
Radium, possible injuries of posterity by .. 1581
Recklinghausen's Disease ab-1607
Rectum, granuloma of 1588
Rhinitis, allergic 1586
Roentgen Rays, possible injuries of posterity by 1581
single dose of 3 units 1588
Ross Fund 1576

Scholarships, list of 1576
Scoliosis, adolescent, muscle factor in *1535
Seasons, influence on disease 1581
Septicemia, postanginal, etiology ab-1608
Serum, plasma phosphatase ab-1600
Smallpox without exanthem 1581
Society Proceedings **1592**
Spasms in childhood ab-1608
Specialists, training, rôle of graduate school ab-1568
Specialization, tendencies toward ab-1567
Specialties, control ab-1568
Spinal Cord, funicular myelitis ab-1606
Spleen, roentgen study with thorium dioxide ab-1604
State Board Examinations **1589**
Stomach, cancer ab-1608
cancer, postoperative treatment 1587
photography ab-1600
Student research in medical school ab-1570
Suprarenal exhaustion ab-1598
Syphilis, acetarsone in ab-1596
congenital, in new-born ab-1593
Kline finger blood precipitation test .. ab-1596
late cutaneous ab-1596

Tapeworm and pernicious anemia ab-1599
Tar removers, toxicity 1588
Teeth of the dead, recovering gold from. C-1586
Tetanus, otogenous *1546
Thorium dioxide preparation ab-1604
Thrombophlebitis, tonsillogenic ab-1608
Tinnitus 1587
Tonics and Sedatives ..... **Adv. page 28**
Trichinosis, first cases reported, North Dakota 1575
Trypanosomiasis, acetarsone in ab-1596
Tuberculosis, blood viscosity in, in children ab-1607
early diagnosis campaign 1573
immunization, B C G, enteral or oral route ab-1593
Typhoid in large cities of U. S. *1550
in troops in Spanish-American War 1588

Ultraviolet therapy in dermatology *1553
Urine examining service of Montgomery Ward & Co. 1561; E-1566
manometer suprapubic drainage apparatus *1542
retention due to ephedrine *1545
Uterus, abdominal total hysterectomy ... ab-1594
mural sarcoma ab-1595

Vaccinia, immunity and disability caused by ab-1601
virus, inactive, immunization with ab-1601
Vertigo 1587
Vitamin B, increasing supply in children's diet ab-1593

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 98, NO. 18 CHICAGO, ILLINOIS APRIL 30, 1932

ECZEMA OR DERMATITIS

THE PROBLEM OF HYPERSUSCEPTIBILITY

H. N. COLE, M.D.

CLEVELAND

"Doctor, I am suffering from eczema"—most often pronounced with the emphasis on the second syllable. What physician has not heard this expression hundreds of times, and how often even the best physicians and dermatologists have been at their wits' end before seeing the last of the patient! That the condition is common goes without saying, and even in dermatologic practice, where more careful elimination of related conditions would be achieved, one finds that the percentage of eczema and dermatitis is very high in comparison with the number of dermatoses diagnosed. Moreover, even in the practice of the general practitioner, the problem of eczema and dermatitis comes up so often that I feel that it would be well worth a little consideration; at least, that is my excuse for presenting it for study.

The word eczema is an old term. As early as 1800, Robert Willan defined it as "a condition generally due to the effects of irritation, whether externally or internally applied and . . . occasionally produced by a great variety of irritants in persons whose skin is constitutionally very irritable." Naturally, this is a pretty broad definition, and since Willan's time many conditions have been taken out of the vast scope of this definition, as for example, scabies; moreover, the mycotic infections of the skin have been removed from it and clearly defined as separate entities. The same is true of impetigo and of the pyodermias, or diseases due to pus producing organisms, such as the staphylococcus and the streptococcus. Diphtheria of the skin has also been eliminated from this grouping.

PRESENT SCOPE OF ECZEMA

Yet, to say that eczema is at present a well defined entity is not altogether true. Eczema was a subject up for general discussion at the International Dermatologic Congress in 1900, and again at the congress held in Copenhagen in the summer of 1930. Various points of view were presented and many theories advanced. There is still a great diversity of opinion as to what eczema is. Sutton, in the last edition of his book, thinks that it is difficult to form a satisfactory definition or to state precisely what the term includes and does not include: "It is a sort of dermatological scrap heap from which, from time to time, some newly assembled group of symptoms is being removed as a distinct disease entity." Yet, if one considers the points of view of the different schools and attempts to group related ideas, one finds various conceptions as to the position of eczema today and as to its relation to dermatitis.

There is one group that takes the position that eczema is a disease due to some endogenous causation—at least, it is never exogenous and discernible. On the other hand, there is a large group of dermatologists who feel that eczema has nothing distinctive about it It is nothing more or less than a dermatitis of the skin. Eczema and dermatitis are to them synonymous terms, and it is even a question with some of this group whether the term eczema should not be discarded. The tendency, however, in Europe is for this group to use the term eczema rather than dermatitis. Probably most of the large groups of European dermatologists, with the exception of Sabouraud in Paris and his followers, adhere to this middle ground. This writer, along with many others, takes the point of view of his definition: "Eczemas are those vesicular or weeping eruptions of the skin of which we are ignorant of the cause." They would use the term dermatitis for an inflammation of known etiology and eczema for a process of undetermined origin. The idea is constantly advanced that in an eczema one is dealing with some internal, unknown causation. On the other hand, with this particular school of thought, if one were to find the cause of a peculiar, puzzling, inflammatory process of the skin, it would no longer be called an eczema but a dermatitis.

The Swiss dermatologist Bloch says: "There is a complete failure in showing the existence of metabolic disturbances which are common to all, or to many types of eczema, and which are pathognomonic for this condition of the skin. Viewed from the standpoint of physiological chemistry, eczema is not a metabolic disease." However, this view of an internal causation of eczema and an external causation of dermatitis is held by a large group, notably the American dermatologists Ormsby, Sutton, Schamberg, Hartzell, Stelwagon and Schalek; by Sequeira, Prosser White and McKenna in England, and by Sabouraud in France. Prosser White is convinced that typical cases of idiopathic or endogenous eczemas do exist and that they exhibit certain peculiarities and clinical differences by which they can easily be distinguished from their occupational prototypes.

ETIOLOGY OF ECZEMA-DERMATITIS

Now that I have defined as clearly as I can what the present conception of eczema is, as viewed by different schools of dermatology, it is my purpose to consider briefly the etiology of the disease. It is true that this may be rather difficult because of the diverse opinions as to the limitations or scope of the definition. The

Read before the Kansas City Southwest Clinical Society, Kansas City, Mo., Oct. 7, 1931.

From the Department of Dermatology and Syphilology of the Western Reserve University Medical School and of the Cleveland City and Lakeside hospitals.

original idea of Willan was that the causation was endogenous, though he also accepted external irritants as causative factors. Moreover, through the past century, at least, there has constantly been held before the attention of the medical profession the idea of Willan of an internal origin of the condition. As one looks over the literature and reviews the opinion of modern dermatologists, one finds more and more that still another concept has been brought forward as of great moment in the etiology of this trouble. For many years it has been well known that many sufferers from asthma and hay fever are also sufferers from eczema. Quite often the child of an asthmatic parent does not inherit the asthma yet is a sufferer from eczema. Again, there is the hay fever sufferer with a concomitant eczema; if he moves to a different climate for the season, not only the hay fever but also the eczema disappears. Both, however, reappear on the return of the sufferer to the former environment. It is well known that ragweed is often the cause of asthma. Sutton and others have also reported dermatitis of the skin due to the same weed; or should it be called eczema? Cases are also reported of patients sensitive to such articles as buckwheat or quinine. There are individuals who react to the ingestion of very small amounts of either of these articles, with violent symptoms and also with an acute, erythematous, generalized eruption of the skin. All physicians are familiar with certain children who react with violent outbreaks of the skin after the ingestion of cow's milk. We have all seen certain patients in whom, after contact with a horse, a dermatitis of the skin and a violent asthma develop.

More and more the medical profession is swinging round to the concept that asthma is a matter of idiosyncrasy, possibly also with an hereditary factor. The same idea of idiosyncrasy also seems to be increasing in favor as a great factor in the causation of eczema. As long ago as the International Dermatologic Congress in 1900, the German dermatologist Jadassohn advanced the opinion that "External or, rarely, internal irritants added to idiosyncrasies most variable in their type play the essential rôle in the etiology of eczema." We likewise find the English dermatologist Barber today defining eczema as "an inflammatory reaction of the skin indicative of epidermal sensitization." Bloch defines eczema as an "idiosyncratic disease of the skin." The physician who contracts a dermatitis or eczema of the hands after using mercuric chloride in surgical work has an idiosyncrasy to mercuric chloride. The same aphorism applies to the dentist on whose hands an eruption appears after the use of procaine hydrochloride. At first he may have had no difficulty from the use of the preparation, but as time goes on he seems to become idiosyncratic, or hypersensitive, to its further use. It might be termed a hypersusceptibility. Another term that is sometimes used for this hypersensitive state is allergy. It simply means an "altered state." The dentist who has become hypersensitive to procaine is in an allergic or altered state to that particular drug. The physician who contracts a dermatitis after contact with iodoform is also allergic, or in an altered state, to that drug. The gardener who reacts with a violent skin eruption after working with primroses has developed a hypersensitive, or allergic, state to primroses.

Physicians probably are indebted as much to the German dermatologist Jadassohn and to his Swiss colleague Bloch as to any one else for the elaboration of present ideas of hypersensitiveness or allergy in relation to eczema. A great deal of work has also been done in this country by Coca, Duke, Sulzberger and others. The impetus to the study of hypersensitiveness was developed in this country, the so-called skin tests being used. These were later taken up enthusiastically by the Germans and elaborated. It has remained for them to work out many of the details for proving these allergic states. They have now gone so far that one finds Bloch and his followers so bold as to say that, with a careful history, survey and examination of the patient with an eczema, they will be able in a large majority of the cases to lay their hands on the offending causative outside factors. Both Bloch and Jadassohn use the technic developed and now known as the Prausnitz-Küstner technic to prove the presence of a hypersusceptibility. It consists in the withdrawal of a little blood from the suffering patient. The serum is separated off, run through a Berkefeld filter, and 0.1 cc. injected intradermally into a normal patient. Later, but best after twenty-four hours, the spot injected is scratched with the suspected agent causing the dermatitis, or a small amount is injected into the same site. If the test is positive, an urticarial wheal with an erythematous zone develops and gets larger for from fifteen to thirty minutes and then gradually disappears; this is known as an immediate reaction. To illustrate: A gardener has a rather chronic dermatitis of the hands and face, suspected of being due to an idiosyncrasy to the primrose (Primula obconica) with which he comes in contact in his daily life; 0.1 cc. of the gardener's serum separated from the blood was injected intracutaneously in a normal individual, and twenty-four hours later the same site was scratched with a needle which had been rubbed back and forth over the leaf of a primrose. A positive wheal reaction took place in about half an hour and gradually disappeared. This Prausnitz-Küstner technic is now being used widely, not only for the solution of eczema but for various idiosyncratic diseases, such as chronic urticaria, hay fever and asthma, in which the physician is attempting to find the offending cause of the trouble.

Another type of test has been elaborated and worked out by Jadassohn and Bloch and is now being used extensively: the so-called patch test for eczema. For this purpose a piece of clean old linen cloth about 1 inch square or smaller is saturated with the substance suspected of irritating the patient. For the purpose of comparison, I shall suppose that it is moistened with a specimen of hair dye. This particular hair dye has been used on a woman who now has a severe dermatitis of the face, neck and arms. The dye contains paraphenylenediamine. This saturated piece of linen is then laid on the skin, for example, the upper arm or chest, preferably a nonhairy area, and, of course, an area showing no evidence of inflammation. Over this patch another larger piece of linen cloth is applied to protect the spot from outside contacts, and it may even be covered once more with a square piece of cellophane, gutta percha or even adhesive plaster. It is then held in place for twenty-four hours and removed for the reading of results. Reading may also be made in forty-eight hours, and it is well to follow it for some days, as delayed positive readings may show up even up to ten or fifteen days later. Readings are graded from 1 to 5, 1 being redness; 2, redness with infiltration and a formation of a small papule; 3, a small papule and vesicle formation; 4, a large confluent vesicle, and 5, separation of the epidermis and final

necrosis. The woman patient referred to may, at the end of twenty-four hours, show a grade 4 vesicular reaction, thus indicating her susceptibility to paraphenylenediamine. In making these tests it has been found that the skin to be tested must be free from fat. In using such a material as a lacquer to be tested, it is simply painted on the spot of skin and then covered up. With a suspected powder, for example, cement, one test is made with the dry powder and another with a soft, watery emulsion. The skin is not rubbed as a preliminary to the test, though there may be circumstances in which it is even justifiable, provided a like control is made. With strong suspected acids or alkalis a diluted preparation is employed. It is found that portions of the skin with a thick epidermis do not react as well as parts with thinner epidermis. It has also been noted in some cases that the patient will not react on skin never affected, though if the test is done on an area formerly affected it may be positive. In other words, a local allergy or sensitiveness has developed.

In Bloch's clinic the patch test has become so useful that certain stock preparations are used in every case of eczema. These include turpentine, quinine-hydrochloride, formaldehyde (from 1 to 5 per cent), tincture of arnica, mercuric bichloride (1 per cent), iodoform, ointment of ammoniated mercury, Chinese primrose, naphthalene, adhesive plaster and mercury plaster. At the clinic an attempt is made to employ patch tests with preparations with which the patient comes in contact in daily life and daily work; for example, a baker is tested with dough and flour; a housewife, with turpentine, washing powder and soaps; a mason, with cement, and so on ad infinitum. It has been found from these tests that this eczematous hypersusceptibility or allergy may be but to one substance—monovalent. Again, it may be to more than one substance—polyvalent. The susceptibility to the different preparations may vary. One substance may set up a very strong reaction, another a milder reaction, and still another substance a weak reaction. One patient may be sensitive to iodoform, another to the Chinese primrose, and another to neoarsphenamine. On the other hand, another patient may be sensitive to all these preparations. Bloch gives his own history in connection with the Chinese primrose (Primula obconica). He desired to work out the irritating principle that causes the dermatitis of the skin in so many individuals after they come in contact with it. Eventually, the chemist isolated a nitrogen free substance, $C_{14}H_{18}O_3$, which they called "primin." Bloch painted an abraded area of his skin 4 cm. square with a solution of this concentrated preparation. There was no reaction—in other words, he had no idiosyncrasy to it; he was not hypersensitive; there was no allergy. Later, a second application was used, and still there was little or no reaction. With a third application, however, a vesicular inflammation developed. In his case, then, simply by concentration the individual constitutional factor which showed no idiosyncrasy to primin has been gradually overcome; he has become idiosyncratic to it and a typical idiosyncrasy has been transformed into an allergy. Now he has such a sensitivity or allergy that if he walks into a room in which a Chinese primrose is placed he will develop an asthma and severe dermatitis lasting a week. Thus, in his case a person having no hypersensitiveness develops a monovalent allergy to the primrose. Bloch thinks, as a result of a patch skin test, that he is safe in asserting that the average normal individual will not react with the tests ordinarily used in their set up. An isolated individual here and there may react to one: probably not more than 5 per cent. As one gets into the list of persons with a dermatitis, however, the proportion who react rises greatly, 35 per cent; and if, instead of the routine stock articles already mentioned, still other articles of trade are employed, the percentage who react rises even more. As Bloch says, "In this greater reaction tendency of the skin, we have the mean and essential difference between eczematous and noneczematous individuals—a latent idiosyncrasy." He feels that there is no substance and no physical influence on the body which cannot, under certain conditions, cause an eczema. This is especially true with the presence of certain reaction capabilities in the skin. In this sense, then, everyone is potentially subject to eczema. The eczema may depend on the concentration of the irritant on the area affected. If it is in a solution, it may increase the permeability of the skin. The persons trade may prepare the skin for the irritant; injury may also play a rôle; maceration of the skin may also have an influence; the duration of the contact with the irritant may be a factor; repetition certainly must be reckoned with.

As far as internal factors are concerned, it is possible that they may also have a place. There is no question that heredity plays a part in many cases. Undoubtedly the physical condition of the patient may have a bearing. It is well known that chlorosis has a great deal of bearing on the housewife's dermatitis, seen in washerwomen and domestics. Probably the internal factor has a greater bearing in the eczema of childhood than of adults, though even here it must be seriously considered. I feel that, while in the past the pendulum has swung too far toward the theory of internal causation alone, now apparently the tendency is to allow it to swing too far toward the zone of purely external causation. Certainly, some drugs have a tendency to cause an eruption on the skin. Some of these are common: phenolphthalein, quinine, the salicylates, the bromides, the heavy metals, arsenic, mercury and gold. Given an eruption on the skin in an old person subject to constipation and accustomed to taking cathartics, a searching history may reveal the cause of the skin condition, phenolphthalein in one of its forms. Any of the barbituric acid series of hypnotics, so popular at present, may be the cause of a puzzling fixed eruption of eczema or of a generalized dermatitis. Moreover, certain individuals have an idiosyncrasy to various foods that they are eating; for example, over a long list, buckwheat flour, wheat flour, milk, tomatoes, seafoods. I have already quoted Bloch to the effect that in his estimation metabolic and chemical studies of the body and of its fluids have shown him nothing in the way of disturbances that are pathognomonic of the disease eczema.

DIAGNOSIS

Given a case of suspected eczema or dermatitis of the skin, what are the factors that will assist in making a diagnosis? An eruption is being dealt with which shows redness, scaling, cracking, exudation, perhaps crusting, and more or less thickening of the tissues, depending on the duration of the trouble. It gives much evidence of scratching on the part of the patient.

First, one would like to lay great stress on the taking of a careful history. In a doubtful case a careful history may give the lead to the diagnosis. One must go into the antecedents of the patient and of his family; his daily life and routine must be reviewed. His work

must be gone over step by step. Perhaps his diet must be studied. The question of his clothing must be gone over: A new suit with a man, a new dress with a woman, may be the irritating agent. A match box, worn in a trouser pocket, may be the cause of a peculiar, unilateral, isolated, sharply defined area of dermatitis on one thigh. With a female the entire subject of toilet preparations and cosmetics must be gone into: An innocent henna rinse, so-called, may be paraphenylenediamine in disguise and very irritating to the patient's skin; a new toilet water may be setting up a dermatitis through its oil of bergamot content. A puzzling dermatitis of the ears, the eyelids, and the bridge of the nose may be due to the wearing of some new glasses, and the trouble, a nickel dermatitis. An old chronic dermatitis, located on the borders of the buttocks and upper thighs posteriorly, may be a toilet seat dermatitis, either from lacquer or from the stain in the varnish. J. Frank Fraser of New York several years ago in a discussion reported the case of a woman who, from childhood, had had a chronic eczema. All sorts of treatment had failed. She took a sea voyage, and after two days her skin was entirely clear and remained so until she landed. Here, certainly, is a typical case, rich in history prospects. One might be able to find the causative factor; the history would be a large item in doing so.

The onset of the disturbance and its duration in relation to other factors, for example, a change of work or change of location, would be of great help in making a diagnosis. The distribution of the eruption would likewise help greatly in arriving at the causative agent. The man with a trade dermatitis generally is affected over the hands, the forearms, perhaps the face and the neck and possibly the genitalia. The patient suffering from an imperfectly, but freshly, dyed pair of shoes will have the eruption around the borders of the shoes where they come in close contact with the skin—poison from paraphenylenediamine. The patient putting drops in the eyes may have a dermatitis or eczema limited to the contiguous zone around the eyes—susceptibility to atropine. The telephone operator with an eruption of the ears alone will at once make one suspicious of an earphone dermatitis—probably from the varnish or tar in the phone. Naturally, with a generalized type of eruption one would look for internal factors such as the ingestion of drugs. In other words, the localization of the eruption may assist one greatly in arriving at a definite conclusion as to its causation.

It goes without saying that a careful physical examination is indicated, especially in an old chronic eczema. Finding hyperglycemia would, of course, be of great moment. If, after all these things are done and one is still at sea, it will remain to make the special diagnostic tests; for example, the use of the Prausnitz-Küstner technic in the hands of experts, and the scratch food tests, so widely employed here in America. I, myself, have not had such great success with them, but they are worth trying in a puzzling case. I have already spoken of the patch test, which should be used with the materials with which the patient comes in contact in his work and life. Hopkins and Kesten, in a recent report on a large series of patients on whom scratch tests, intradermal injection tests, patch tests, and the like were employed, used around 11,000 tests in 188 cases. They also employed what they called four elimination diets—balanced, but still eliminating causative factors. One diet contained neither wheat, milk nor eggs; one had milk but no wheat or eggs; each one of the others contained one of these constituents but not the others. As a result of these studies they felt that their results from the patch tests were not as valuable as those from the intracutaneous, or scratch, tests. They had some brilliant results with their elimination diets alone, though by no means did they succeed in finding the causative factor in all their cases of eczema; yet, on the whole, their results were very good, not only from the diagnostic standpoint but also from the standpoint of the cure of the disease. Perhaps with a larger experience over a period of years with patch tests, as used in Bloch's clinic, their results with this test alone would be much more far reaching.

TREATMENT

My purpose in this paper has been to arouse interest in newer developments of eczema research, primarily because it is such a common disease, even in general practice. It is hardly my purpose in such a general paper to attempt to take up the item of treatment. After all, if it is a case of long standing, an obstinate case, it probably will require the attention of an expert, and perhaps even he will have his difficulties. On the other hand, if one is dealing with an acute process and is able to find the causative factor, the cause of the eczema should be comparatively simple. First of all, the irritating factor, or factors, should be removed. Following this, if there is a great deal of exudation, the use of hot potassium permanganate baths, or compresses, 1:5,000, or boric acid baths, 1:5,000, several times a day for ten or fifteen minutes are of value. The baths are soothing, astringent and mildly antiseptic and antipruritic; or one may employ the colloid bath for from ten to twenty minutes several times a day. It is made by dissolving a cupful of sodium bicarbonate in half a tubful of water at a temperature of about 100 F. and then adding oatmeal, 3 cupfuls, which has been previously boiled and put in a bag of cheesecloth. The bag is gently squeezed in the bath until the water becomes opalescent. The temperature of the water should be at least 98 F. before the patient enters the bath. On leaving the bath, the patient must be patted dry, or nearly so. Along with this a 5 per cent boric acid ointment, or the official ointment of rose water may be lightly applied. As the condition becomes more chronic, stimulation may be in order; for example, the use of a 20 per cent liquor picis carbonis, National Formularly, and 5 per cent ammoniated mercury, U. S. P., in petrolatum and hydrous wool fat. In old chronic cases a coal tar paste may be employed; for example, coal tar and zinc oxide, of each 4 Gm., may be mixed and petrolatum added to make 30 Gm. In employing this preparation, one should apply it lightly at night, with no tight covering over it, and it should be cleaned off in the morning with cotton and olive oil. Later it may be gently washed off with soap and water. The coverings must be washed out each day. If a little lard is rubbed into them, they will wash out readily with soap and warm water.

In the older, more chronic cases, roentgen therapy in the hands of an expert is also of value. After all, in these cases, if they do not respond to ordinary soothing measures, the attending physician will probably do well in hesitating before using severe stimulating remedies. It has been my experience that many of the bad skin conditions that I have been called to see in old cases of eczema have been due to the use of unwise or too

strong remedies applied by the druggist or even by the attending physician. Finally, the handling of an old chronic case of eczema, from the standpoint of finding the cause, of studying possible internal factors involved, and of properly treating it, is a major problem in medicine.

1352 Hanna Building.

ADDISON'S DISEASE TREATED WITH SUPRARENAL CORTICAL HORMONE (SWINGLE-PFIFFNER)

GEORGE A. HARROP, JR., M.D.
AND
ALBERT WEINSTEIN, M.D.
WITH THE CLINICAL ASSISTANCE OF
ARTHUR MARLOW, M.D.
BALTIMORE

Early in April, 1930, shortly after the announcement by Drs. W. W. Swingle and J. J. Pfiffner [1] of their successful preparation of an extract from beef suprarenal cortex which would prolong the lives of bilaterally suprarenalectomized cats indefinitely, we were fortunate in making an arrangement with them whereby we sent an assistant, Mr. George Farrar, to Princeton to aid in the manufacture of the extract during the summer of 1930, and in exchange received a supply of the cortical material for use in the study of patients with Addison's disease and for other purposes. This supply was furnished us for clinical use from Princeton until June, 1931. Since then we have been making the extract in our own laboratory. Our own material has essentially the same effect and potency as that produced in the Princeton laboratory, as judged by biologic assay on dogs [2] and by its clinical effect on patients.[3]

During the past twenty months we have had under observation eight patients with Addison's disease, seven women and one man. Four of these patients have died. The other patients, at the present time, are living and are carrying on more or less restricted activities. We report in this communication our conclusions as to the value of this new form of therapy on the basis of this experience.[4]

A limited amount of additional information has been gained during the eighty years since Addison first published his description of the disease which now bears his name, despite the production of a vast literature. One of the significant things, now apparently established, is that the essential pathologic process in the disease lies in the cortical portion of the suprarenal gland and not in the medulla.[5] It is by no means proved, however, that direct or indirect impairment of function in the medulla is not responsible for certain of the characteristic clinical phenomena, particularly the pigmentation, the hypotension and the disturbance of sugar metabolism. The predominant rôle of tuberculosis as the etiologic factor in about 80 per cent of the cases, and of a peculiar atrophy of the glands in nearly all the remainder, has also been established. Finally, the remarkable tendency of the clinical course of the disease to remissions and relapses is now clearly evident.

These relapses frequently follow infections, unusual or exhausting physical exertion, and the shock of even minor surgical procedures. A large proportion of them, however, come on insidiously and for no clearly foreseen cause. To the unwary or inexperienced observer they may appear at first to be purely functional in nature. They are usually ushered in by complaints of increased weakness and physical exhaustion. Anorexia may then appear, followed by nausea and finally by vomiting, which is prolonged and of maximal and distressing severity. Diarrhea is a less frequent complication. The pigmentation often becomes deeper, the blood pressure sinks, and the patient may become pulseless. Pain is seldom complained of, although in our experience it may occur in the abdomen, flanks or lower part of the back. From such a relapse, which has been variously called an "addisonian crisis" or "acute suprarenal insufficiency," the patient may recover, or in spite of any treatment a fatal result may occur. Such an event is illustrated by the following example:

CASE 1.—C. L., a woman, aged 50, married, reported that, six and a half years before admission, brown spots appeared on the abdomen following laparotomy for fibroma of the uterus. One year before admission, weakness began insidiously and there was increased pigmentation on the extremities, later over the entire body and on the lips, gums and buccal mucosa. An attack of vomiting occurred one month before admission to the Johns Hopkins Hospital, July 30, 1930, and a fainting spell two weeks previously. For the past three months the weakness had been extreme, and she had been bedridden. The systolic blood pressure had been low for years. She had lost 25 pounds altogether (11.3 Kg.), and 5 pounds (2.3 Kg.) in the previous two weeks.

The patient was rather emaciated, with diffuse brown pigmentation over the body, accentuated over the surgical scars, and with spots on the buccal mucosa, gums and lips. There was moderate secondary anemia (red blood cells, 3,400,000; hemoglobin, 82 per cent). The blood nonprotein nitrogen concentration was elevated (45 mg.) per hundred cubic centimeters and the blood sugar was normal (98 mg.). Blood pressure was 98 systolic and 68 diastolic.

She was given at once daily injections of the cortical extract in doses of 1 or 2 cc. subcutaneously, and at the end of three weeks the anorexia and nausea were appreciably less and she felt so much stronger that she was able to read and to write letters for the first time in months. Nevertheless, the anorexia and nausea persisted with occasional attacks of vomiting, and improvement was never so striking as in our other patients. Fifteen days later, for no cause that could be perceived, there was an abrupt relapse with very low blood pressure, continuous vomiting and profound weakness. The collapse that followed may have been in part the result of an intravenous injection of dextrose and physiologic solution of sodium chloride, September 5, but fairly satisfactory recovery followed the use of large doses of the cortical extract. Nausea and vomiting continued to a certain degree during the following days, and the anemia increased (red blood cells, 2,600,000; hemoglobin, 56 per cent). A transfusion of 400 cc. of citrated blood was then given without any improvement, and she died forty-eight hours later, September 25. The large amounts of extract injected both subcutaneously and by vein are shown in chart 1. Autopsy revealed caseous tuberculosis of both suprarenal glands and calcified tuberculosis of the left fallopian tube.

From the Chemical Division of the Medical Clinic, the Johns Hopkins Hospital and University.

1. Swingle, W. W., and Pfiffner, J. J.: An Aqueous Extract of the Suprarenal Cortex Which Maintains the Life of Bilaterally Adrenalectomized Cats, Science **71**: 321 (March 21) 1930.

2. Harrop, G. A.; Pfiffner, J. J.; Weinstein, A., and Swingle, W. W.: A Biological Method of Assay of the Adrenal Cortical Hormone, Proc. Soc. Exper. Biol. & Med. **29**: 449 (Jan.) 1932.

3. Acknowledgment is made of the assistance of Miss June Thomas in the chemical preparation of the cortical extract in this laboratory, and of the help of Dr. L. J. Soffer in the work of biologic assay. We also are indebted for assistance to the Medical House Staff.

4. We are indebted to the following physicians for referring cases of Addison's disease to us for treatment: Drs. Henry M. Thomas, Jr., Fuller Albright of Boston, Frank T. Fulton of Providence, R. I., Evan Evans of New York, J. H. Gibbes of Columbia, S. C., and A. Z Wolodersky of Brooklyn.

5. Wells, H. G.: Addison's Disease with Selective Destruction of the Suprarenal Cortex, Arch. Path. **10**: 499 (Oct.) 1930. Brenner, O.: Addison's Disease with Atrophy of the Cortex of the Suprarenals, Quart. J. Med. **22**: 121 (Oct.) 1928.

In reviewing this case, it is difficult to see in what particular the treatment failed, although two points deserve comment. The patient did not tolerate well the intravenous infusion of saline solution, September 5, and the transfusion, September 23, was followed by a chill and fever from which complete recovery was never made. The blood of both patient and donor were properly matched as a subsequent recheck demonstrated. The vulnerability of these patients to any kind of

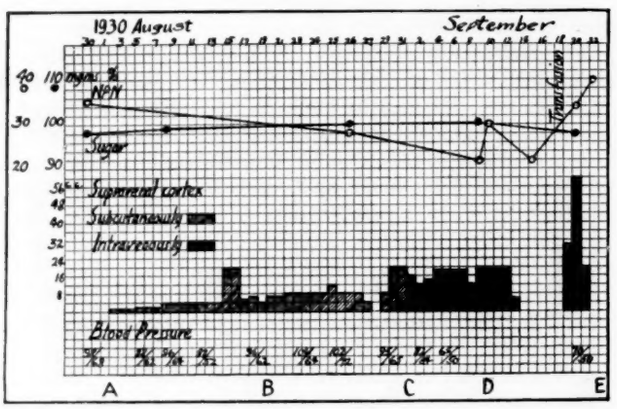


Chart 1.—Clinical course in case 1: The patient was in the hospital fifty-nine days and received 371 cc. of extract, the equivalent of 15.96 Kg. of beef suprarenal cortex. *A*, weakness, nausea, vomiting, hypotension, backache, numbness of feet; *B*, improvement; *C*, crisis, vomiting, hypotension, fever, tachycardia; *D*, crisis, circulatory collapse, vomiting, fever; *E*, death.

surgical procedure or shock is well known. There is no doubt that extraordinary care must be taken with any intravenous treatments during the relapses. We should hesitate to give a transfusion in this phase of the disease again unless the indications were urgent. A second possible error was in the rather free use made of epinephrine and suprarenal gland preparations by mouth and by rectum, which we believe is in general a perfectly useless method of therapy. Certainly, judging from our later experience, suprarenal cortical extract was given in ample amounts. None of our other patients have received as much.

In examining the information that has been gathered from an extended study of the chemical changes taking place in the blood and urine of patients during relapse, two points stand out with distinctness: one is the frequency of a rise in the nonprotein nitrogen concentration of the blood, and particularly of its urea fraction; the other is the occurrence of hypoglycemia. The former has usually appeared and the latter phenomenon has frequently occurred in the series of relapses that we have observed. We now regard elevation of the blood nonprotein nitrogen, or marked lowering of the blood sugar concentration, or the occurrence of both phenomena as an indication for the institution of vigorous therapeutic measures. The typical reaction is illustrated in the following case, in which the two changes occurred simultaneously:

CASE 2.—M. S., a woman, aged 37, married, had for the past four or five years noted a gradual departure from health. She became listless, tired and weak. In 1928 it was noted that her systolic blood pressure was 95, and in the summer of that year her skin began to darken. There was no gastrointestinal disturbance until her first admission to the Johns Hopkins Hospital in March, 1930. She then weighed 128 pounds (58 Kg.), her best previous weight having been 160 pounds (72.6 Kg.). At this time her blood pressure was 98 systolic and 65 diastolic. There was moderate diffuse pigmentation, typical in distribution, with spots on the gums and buccal mucosa. The fasting blood sugar concentration was 87 mg. per hundred cubic centimeters. During the next three months she was treated with dried suprarenal cortex preparations and epinephrine by mouth entirely without objective or subjective effect.

In July, 1930, the new cortical extract was commenced, 2 cc. daily, with great subjective improvement. The nausea ceased and she became much stronger. During the winter of 1930 and 1931, however, for four months she took no treatment. She again returned to the hospital, April 7, 1931, having lost about 9 pounds (4.1 Kg.) in the meanwhile, with symptoms of marked weakness and vertigo, and with decided increase in pigmentation. For several days previously, there had been nausea, vomiting and some diarrhea. Shortly after admission she had an acute attack of suprarenal insufficiency as recorded in chart 2. This shows the fall that took place in the blood sugar, and the rise in nonprotein nitrogen and urea concentration of the blood during this period, as well as the character of the treatment with cortical extract in large amounts. There were two milder attacks in May, with marked lowering of blood sugar and psychic disturbances, which clearly followed attempts to raise the extremely low basal metabolism with thyroid extract. From all these she recovered and was discharged at the end of July in good condition. Throughout the past summer she did quite well, receiving 3 cc. of extract twice weekly, but she acquired an acute respiratory infection early in October, 1931, and was again admitted to the hospital to weather a relapse of moderate severity. She continued in excellent condition on from 3 to 4 cc. of extract twice a week, and gained 12 pounds (5.4 Kg.) (chart 3). Instead of the irritable querulous disposition which she had displayed during the periods of serious illness, as is so common in these patients, she became cheerful, cooperative and happy. She returned for her biweekly injection of cortical extract, January 15, in excellent spirits and was cautioned against overexertion. Forty-eight hours later her husband telephoned that she had died suddenly in bed. The day before she had eaten food that apparently caused a mild gastric upset. Her chief complaint during the night before death had been of a dull pain about the heart and of moderate shortness of breath. Autopsy showed no evidence of tuberculosis, a small heart with evidence of a very fresh fibrinous pericarditis, and complete absence of the suprarenal glands with the exception of a small bit of medullary tissue on both sides. Careful search and serial

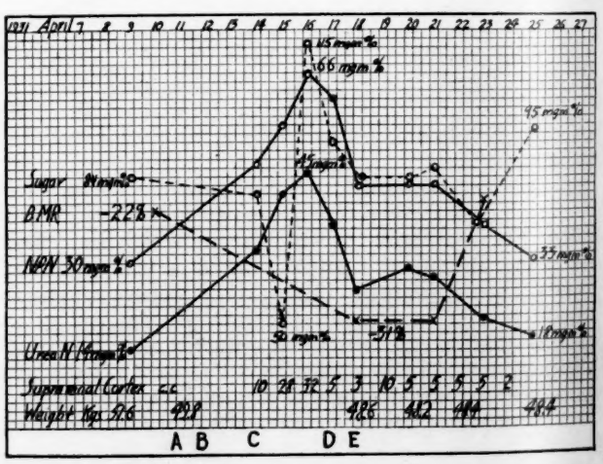


Chart 2.—Course in case 2 during April, 1931: *A*, diarrhea; *B*, anorexia; *C*, collapse; *D*, subjective improvement; *E*, color much lighter, appetite returns.

sections of both renal regions and retroperitoneal space failed to reveal any accessory tissue. None of the other endocrine glands showed remarkable changes.

This patient, then, under treatment with injections of cortical hormone for nineteen months appears to have been dependent over a prolonged period for the supply of cortical material essential for life on the injections given. The cause of death is not clear; it was not suprarenal insufficiency. It seems possible that it was related to the hypotension and to the small heart, so common in these patients, which under the strain of the superimposed pericarditis abruptly failed.

Evidence of some degree of disturbance in urea excretion is frequently present in the relapse, which is not necessarily associated with circulatory failure. The nonprotein nitrogen and urea concentration of the blood rise, while the urinary nitrogen excretion falls. After the conclusion of an acute relapse the urea clearance (Van Slyke) has been lowered in each of our cases. The accompanying table shows the results of the urea clearance after the number of relapses indicated. It is noteworthy that the one patient, C. G., who, up to the present, has not had a typical relapse, alone shows a normal clearance, although the hypotension, lowered basal metabolic rate and asthenia were quite as striking as in many of the other cases. Marked suppression of urine is characteristic of the severe relapse, and resumption of urinary excretion, which often amounts to diuresis, usually occurs during the early phases of recovery. The lowered excretion of water is accompanied by a corresponding suppression of total base, chloride and phosphate excretion, as well as of the nitrogen end-products normally present. This is quite analogous to the phenomena observed in acute suprarenal insufficiency occurring in the bilaterally suprarenalectomized dog, when deprived of its usual maintenance dosage of cortical extract. We shall report detailed experimental studies on dogs elsewhere.

Urea Clearance (Van Slyke) in Patients with Addison's Disease

Patient	Probable Duration of Symptoms	Number of Attacks of Acute Insufficiency	Phenolsulphonphthalein	Nonprotein Nitrogen, Mg. per 100 Cc.	Urea Clearance, per Cent Normal Standard
M. D.	4 years	1	85	34	46
M. S.	5 years	4	60	32	30
B. B.	2 years	2	40	42	34
C. G.	6 months	0	65	32	70
R. C.	4 years	3	..	30	52
D. D.	5 years	1	60	26	22
A. O.	9 months	1	52	41	32

The most conspicuous example that we have observed of the continuous elevation of nonprotein nitrogen in the blood, the reason for which was not explained by other evidence of renal damage, is shown in a third case which terminated fatally:

CASE 3.—E. S. B., a man, aged 34, married, had gradual onset of generalized weakness, which began in August, 1930. He fainted on walking up stairs in November, and he had three other similar attacks in the following two weeks. His weakness and fatigue gradually became more pronounced, and his change in color was first noted in February, 1931. He came to the Johns Hopkins Hospital first, April 11, and shortly afterward developed an acute relapse with severe nausea and vomiting, marked weakness, falling blood pressure, and general abdominal pain. The nonprotein nitrogen concentration in the blood rose from 44 to 80 mg. per hundred cubic centimeters, and at 10 p. m. on the third day of this period he was nearly comatose and pulseless but would respond to strong stimuli. That day he was given 10 cc. of cortical extract plus 500 cc. of 5 per cent dextrose in physiologic solution of sodium chloride by vein and at the end of the treatment was alert, cooperative and thirsty. The next day he was markedly improved, although he still had some nausea. He was given 15 cc. of extract that day. He continued to improve and on the third day the blood pressure was 100 systolic and 52 diastolic, and he felt quite well. The urea clearance test, however, was 21 per cent of the normal.

The nonprotein nitrogen concentration of the blood remained continuously between 50 and 60 mg. per hundred cubic centimeters, and the urea nitrogen of the blood, 25 to 45 mg. even after the symptoms of the relapse had disappeared; the volume of fluid intake and urinary excretion were quite normal. The phenolsulphonphthalein excretion was repeatedly from 50 to 70 per cent in two hours and the urine was on numerous examinations free from albumin and casts, although the specific gravity of the night voiding did not exceed 1.014. In an effort to lower the nonprotein nitrogen of the blood, massive daily doses of cortical hormone were finally administered,

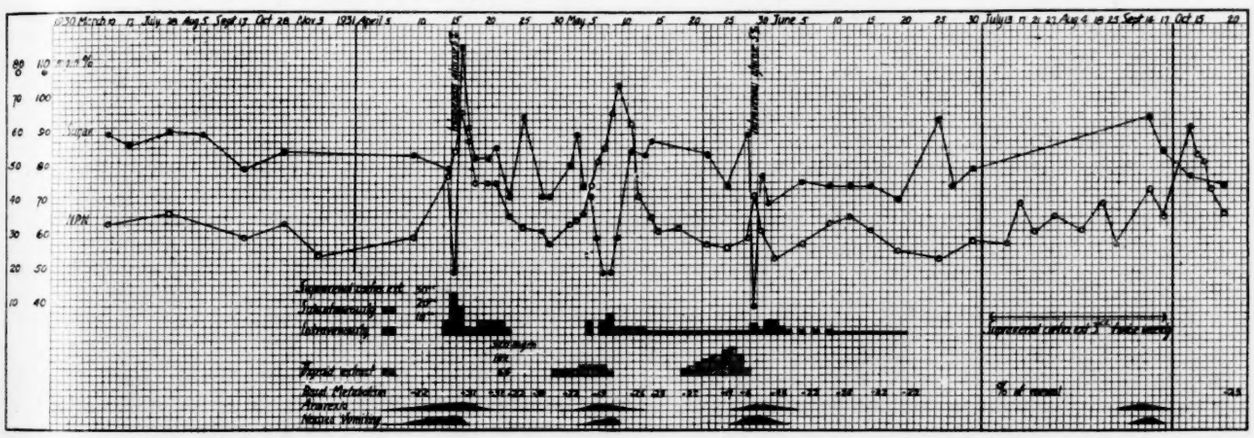


Chart 3.—Observations and treatment in case 2.

30 cc. daily for one week, without any immediate effect. Only on June 1, two weeks later, did it drop to 42 mg., following the administration of thyroid extract, which was given in an effort to ascertain the effect on the low basal metabolic rate, which ranged from —21 to —17 on seven tests performed during May. June 9, another relapse, comparatively mild, commenced at which time the basal metabolism was —6 and the thyroid extract was discontinued. The symptoms disappeared with the injection of large doses of cortical extract and the administration of carbohydrates and fluids by mouth, but the nonprotein nitrogen, which had risen again to 68 mg., June 15, remained continuously elevated at from 64 to 70 mg. on daily estimations for two weeks, only dropping to 46 mg. on June 17. Very low blood sugar concentrations were not characteristic of the relapses in this patient as in others, but in one instance the fasting level was 50 mg. per hundred cubic centimeters, and in another it was 65 mg.

After leaving the hospital late in July, he felt stronger, and at home his appetite improved. During the remainder of the summer he received 1 cc. of extract daily. There were no gastro-intestinal disturbances, and his skin was thought to be lighter in color. He returned again for observation in October, having gained 2 pounds (0.9 Kg.) during the summer, and he was in a cheerful and optimistic mood. The nonprotein nitrogen concentration of the blood was 48 mg., the phenolsulphonphthalein excretion was normal and the urea clearance 19 per cent. The urine continued to be free from albumin and from abnormal formed elements. The blood pressure persisted low,

averaging 85 systolic and 55 diastolic. After discharge, October 23, he returned to his home, apparently in good condition. Ten days later, however, he developed anorexia and irritability, and although he was reported to have improved somewhat after the injection of larger doses of extract, he died on the fifth day with an attack of coughing and dyspnea which the attending physician thought was asthma-like in character and which was somewhat relieved by epinephrine. Autopsy by Dr. B. Earl Clarke of Providence, R. I., to whom we are indebted for this information, failed to reveal any tissue which could be identified as suprarenal cortex, or evidence of tuberculosis in any of the other organs. The kidneys are reported to have shown no significant pathologic change.

This case showed a continuous elevation of the blood urea and nonprotein nitrogen over seven months of observation, with continued impairment of the urea clearance test on numerous observations and a constant marked lowering of the basal metabolism. The undernutrition was moderate but never striking, and some improvement in weight occurred under treatment. At no time, while under observation, was there clinical evidence or symptoms of renal disease, and no striking abnormalities were ever detected in the urine in numerous examinations.

Studies on the blood of this patient were of interest in another particular. Disturbances of cholesterol metabolism have from time to time been observed in suprarenal insufficiency. In none of the other cases here reported was any abnormality of the blood cholesterol level detected. On several occasions during the last admission of this patient (about one month prior to death) a marked turbidity or milky appearance of the fasting blood serum was noted, and cholesterol estimations ranged from 400 to 800 mg. per hundred cubic centimeters. The administration of the cortical extract did not affect this level. In this case, as in the others, the absence of acidosis or of acetone bodies in the urine was quite striking, even over periods in which very little food was taken for a week at a time, and in which severe nausea and vomiting and marked loss of weight occurred.

The fourth case with a fatal termination exhibited puzzling clinical complications:

CASE 4.—R. M. C., a married woman of 36 without known exposure to tuberculosis, first noticed weakness six months after her first pregnancy, eight years ago. Hypotension was observed early in 1927 (systolic pressure 95, diastolic pressure 65). Diffuse brown pigmentation of the skin was observed in September, 1927, and until June, 1931, there were recurrent attacks of weakness and nausea with steady loss of weight (30 pounds, or 13.6 Kg., in four years). She was then admitted to the Massachusetts General Hospital, where she suffered a rather severe relapse, which was treated with large doses of cortin (supplied by Dr. F. A. Hartman of Buffalo), with marked improvement. This was discontinued, September 23, and for a time she did well without injections. She was transferred to the Johns Hopkins Hospital through the courtesy of Dr. Fuller Albright, October 28. At this time there was a typical diffuse brownish pigmentation of the skin and slight buccal pigmentation. Blood pressure was 100 systolic and 60 diastolic. A relapse occurred shortly after admission here associated with two badly infected teeth, which were successfully removed under local anesthesia, and the relapse subsided after treatment with dextrose and cortical extract. November 9, jaundice was first noted and this steadily increased. She had a series of episodes each lasting for several days in which there was marked nausea, anorexia, vomiting and stupor, associated with hypoglycemia. On treatment she rallied from each of these attacks only to relapse a few days later. Hypotension was well marked and a considerable secondary anemia developed. During the last days of life, bleeding from the gums, edema of the legs, and ascites appeared, associated with a marked fall in the plasma proteins and inversion of the albumin-globulin ratio. The course of this patient was striking in that at no time during the two months she was observed at Baltimore was there an elevation of the blood nonprotein nitrogen, although hypoglycemia occurred repeatedly and was associated with characteristic symptoms.

Autopsy revealed complete atrophy of the cortex of both suprarenal glands, a thymus tumor, necrosis and cirrhosis of the liver, and basophilic hypoplasia of the anterior lobe of the hypophysis.[6]

The occurrence of jaundice and of marked liver damage in this case naturally brings up the question of a toxic injury as a possible result of the injections of cortical hormone. The symptoms appeared five days after administration of the material was commenced here, when a total of 40 cc. had been injected. It is true that the patient had received large doses of cortin during the previous summer. So far as we are aware, however, toxic jaundice has not been reported before as a result of injections either of cortin or of the cortical extract made according to the Swingle-Pfiffner method; and we regard it as highly improbable that there is any association in this case. It is an interesting fact that pathologic changes similar in nature but varying in degree were found in the liver in this case and of case 2 as well as in the liver in a case of Addison's disease in which the autopsy was made by Dr. Eugene L. Opie in this hospital in 1901, and which also was a case of cortical atrophy. We have now given many hundred cubic centimeters of the cortical extract to a large number of patients without any harmful effects whatever being noted. There is abundant evidence, however, that incomplete removal of the toxic substances present in suprarenal gland extracts may cause serious effects. We have ourselves produced death in several suprarenalectomized dogs as a result of injections of a preparation sent us for assay. The only extracts so far employed by us for clinical use have been made in our own laboratory or supplied to us by Drs. Swingle and Pfiffner.

The records of the four living patients with Addison's disease treated over a period of months with cortical extract may be briefly given:

CASE 5.—D. D., a girl, aged 18, whose mother had tuberculosis at 30 with sanatorium care, and whose brother was treated at a tuberculosis sanatorium in 1919, stopped school in 1926 because of weakness and spent two years mostly outdoors but did not grow or gain in weight. She went to a health camp three years ago and pigmentation was first noted when her summer tan failed to fade. A diagnosis of Addison's disease was made in the spring of 1931 at the Massachusetts General Hospital, where she had a typical relapse for which she was given cortin intravenously, from 10 to 20 cc. daily, with great improvement. From August 17 until the end of October, when she was transferred to the Johns Hopkins Hospital for study through the courtesy of Dr. Fuller Albright, she received no other treatment.

Examination on admission here showed generalized pigmentation accentuated about the lips, navel and hand wrinkles. Marked pigmentation was also present on the buccal mucous membranes, tongue and soft palate. The roentgenogram of the chest showed evidence of mediastinal tuberculosis, but no pulmonary involvement. The blood pressure has been constantly low, systolic below 90, and diastolic between 50 and 60. November 21, a friction rub developed in the right axilla which lasted two or three days, and on November 24 an attack of nausea and weakness occurred which cleared up when large injections of cortical extract were given and for a time she improved steadily. Early in January she became weaker, dizziness and nausea developed, and the blood pressure became

6. A complete pathologic report of this case as well as of cases 2 and 3 will appear shortly by Drs. Clarence Bernstein and G. L. Duff in the Bulletin of the Johns Hopkins Hospital.

lower. These symptoms promptly subsided when the daily dose of extract was raised from 3 cc. to 5 cc. A further adjustment of extract dosage was later required when symptoms developed, and were overcome by increasing the daily dosage to 6 cc. daily. Her basal metabolism has been persistently low. She shows a marked reaction to the intravenous injection of 2 units of insulin, the blood sugar dropping from 82 mg. to 30 mg. within twenty minutes. The ingestion of dextrose for a tolerance test (1.6 Gm. per kilogram of body weight) also produced a marked hypoglycemic reaction. At the present time she is up in a chair most of the day but there has been no change in the blood pressure, and the weight has increased but 2 pounds since admission. A moderate secondary anemia has persisted for months.

CASE 6.—A. O., a woman, aged 61, married, had had weakness, darkening of the skin and indigestion for three years. So long as she can remember she has had a tendency to diarrhea. She has had no known exposure to tuberculosis. For the past year the symptoms have become much aggravated and she has lost 25 pounds (11.3 Kg.). A diagnosis of Addison's disease was made four months prior to admission, and she consequently received large doses of epinephrine and hydrochloric acid by mouth without effect. Examination on admission to the hospital, in October, 1931, revealed diffuse pigmentation of the skin, and pigmented areas in the corner of the mouth and on the buccal mucosa. There were black freckles over the face, arms and abdomen. Blood pressure was 90 systolic and 64 diastolic. Blood sugar was 90 mg. per hundred cubic centimeters. Five days after commencing injections of cortical extract 1 cc. twice daily, she noted a return of appetite and energy and for the past six months her improvement has been steady. She has gained 14 pounds (6.4 Kg.), and the blood pressure is 114 systolic and 82 diastolic. The color over the exposed areas has become somewhat lighter. She is able to carry on her household duties and feels about as active and well as she did before the onset of her illness.

CASE 7.—C. G., a married woman, aged 28, had tuberculous salpingitis (operation with histologic examination of tissue removed) six years ago. For several years she felt fairly well. In March, 1931, pigmentation of the lips, mucous membranes and tongue was first noted, and a little later of the entire body. Attacks of anorexia and nausea followed and there was some loss of weight. In May she began to be weak and the nausea was associated with occasional attacks of vomiting. Since then she has taken epinephrine, and suprarenal extract by mouth, without any relief. She was admitted to the Johns Hopkins Hospital, Aug. 1, 1931, when examination revealed deep pigmentation of the skin over the entire body, and particularly over the hands and exposed portions, together with many black "freckles." The lips were very dark and almost black in several areas and there were numerous areas of increased pigmentation over the tongue, gums and buccal mucosa. The blood pressure was 88 systolic and 54 diastolic and the basal metabolic rate +1. Roentgenologic examination revealed an area of calcification in the region usually occupied by the right suprarenal capsule. Cortical extract, from 1 to 2 cc. twice daily, was given, beginning August 16. There was a decided subjective improvement, increased strength and appetite within a few days. She has been given injections since that time and the skin color is lighter but there is no change whatever in the marked pigmentation about the mouth. The blood pressure is 108 systolic and 72 diastolic. There has been no gain in weight. She is able to take a considerable amount of outdoor exercise and feels well.

Certain crises in Addison's disease are observed in which nitrogen retention does not occur at all or only to a slight degree but in which marked hypoglycemia is present. This is illustrated by the following case:

CASE 8.—M. D., a woman, aged 35, single, first noticed, fourteen years previously, white patches on the neck which subsequently developed into generalized leukoderma. Seven years before, urticaria began, mild at first but growing gradually worse, so that daily epinephrine injections were required for its relief. Four years before, pigmentation of the skin was first noted. Fifteen months before, she began to lose weight rapidly, she became weak and the bowels were constipated, and six months before she was forced to bed because of marked asthenia. Her temperature was very low and the systolic blood pressure was said to have varied between 90 and 60. At this time she had nausea and vomiting daily for a period of about two months. Since then there had been continuous anorexia and continuing loss of weight and increasing pigmentation. On admission, in July, 1931, she weighed 80 pounds (36.3 Kg.), a loss of 25 pounds (11.3 Kg.) in fifteen months. The emaciation was very marked. There was diffuse reddish brown skin pigmentation intensified about the eyes and skin folds, over the knees, nipples and exposed areas, together with large areas of leukoderma over the neck, abdomen, back and legs. No abnormal pigment was seen on the mucous membranes or the tongue. Blood pressure was 92 systolic and 70 diastolic. The nonprotein nitrogen concentration of the blood was 35 mg. per hundred cubic centimeters, the blood sugar 78 mg., and the blood lactic acid 11.9 mg. The basal metabolic rate was —24 per cent.

For the first twenty-two days in the hospital she received 2 and later 3 cc. of suprarenal cortical extract subcutaneously,

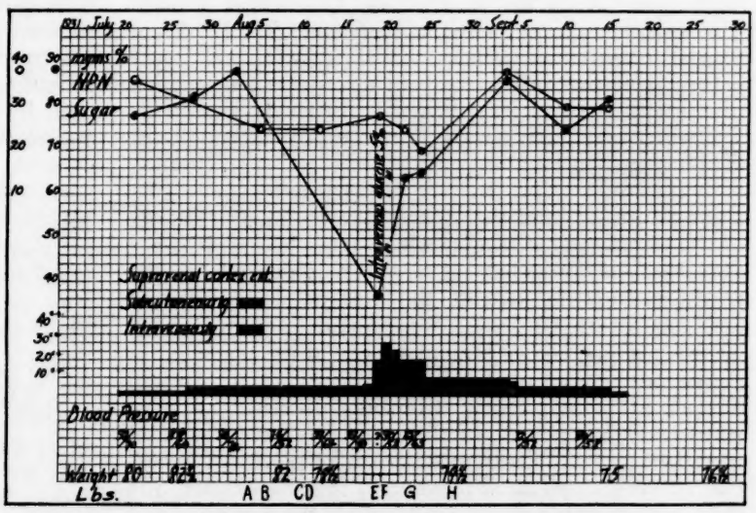


Chart 4.—Observations and treatment in case 4: *A*, vomiting; *B*, weakness; *C*, anorexia ++; *D*, nausea, vomiting; *E*, collapse and coma, vomiting; *F*, slight improvement; *G*, improvement; *H*, continued improvement.

daily. During the next seven days she gradually went into a relapse of maximal severity, and on the eighth day the blood sugar concentration was reduced to 37 mg. per hundred cubic centimeters, but the nonprotein nitrogen was 28 mg. She became critically ill, restless, and semicomatose, with continuous nausea and vomiting, with a scarcely perceptible pulse and a blood pressure too low to measure accurately. The treatment consisted of infusions of intravenous dextrose together with 80 cc. of cortical extract in divided doses intravenously during the following seventy-two hours. Recovery was gradual during the following days, in which 20 cc. of extract was given each day subcutaneously in divided doses. At the end of this time the nonprotein nitrogen concentration of the blood was 20 mg. per hundred cubic centimeters and the blood sugar 65 mg. Gradual improvement continued, and it was possible to lower the daily injection of extract until she was receiving 1 cc. twice a day. On this dosage she has been maintained since that time. She returned for observation in January, 1932, and appeared to be in good condition but without gain in weight or change in blood pressure or pigmentation. She has been able to carry on restricted activities for the past six months and may be said to have shown marked improvement over her condition during the six months before treatment was started.

In this instance (chart 4) nitrogen retention definitely did not appear during the acute phase, although,

after the latter had subsided, the urea clearance was repeatedly found to be low. We believe the evidence is conclusive that the relapse is very frequently complicated or associated with typical symptoms of hypoglycemia. We have studied the response of the blood sugar to minute doses of insulin administered intravenously in our patients with Addison's disease, and we believe that it is of some diagnostic significance. Marked hypoglycemic reactions occur with one or two units, and these may persist over a considerable period (from two to three hours) notwithstanding the administration of amounts of carbohydrates usually sufficient to raise the blood sugar at once. Patients repeatedly state that the sensations they observe during these reactions following insulin are identical with those they have previously experienced in their attacks of weakness or syncope. Increased sensitiveness to insulin appears to be a characteristic of the patient with Addison's disease as it is of the suprarenalectomized dog deprived of cortical extract. The rapid improvement that sometimes occurs in the mental reactions and muscular asthenia of these patients may be due to the relief of hypoglycemia obtained by the use of dextrose rather than to the injection of cortical extract. The cortical extract is not immediate in its action but usually requires an interval of at least several hours before it becomes effective. In this respect the action of cortical extract in Addison's disease is similar to that which we have observed in the dog, although the action seems to be more rapid in the cat.[7] In keeping with the observation that the patients are usually sensitive to insulin and that there may be an overbalance of the sugar metabolizing mechanisms of the body is the fact that acidosis has never been observed in the relapses, and that despite the marked undernutrition and the severe anorexia, nausea and vomiting which occurs, acetone bodies seldom appear in the urine.

We will comment briefly on the effect of thyroid extract in patients with Addison's disease. A large proportion, but not all, of these patients have low basal metabolic rates. Their metabolism responds in a normal or even accelerated manner to thyroid extract, and the basal metabolism is brought to the normal level without great difficulty. This effect, however, is accompanied by increased weakness and fatigue, and in one patient, at least, was responsible for two mild relapses accompanied by marked hypoglycemia. The daily use of epinephrine or of ephedrine in our hands has been useless so far as an effect on the blood pressure is concerned.

At present, all our patients are placed on subcutaneous injections of the cortical extract. Twice a day, a dose of 1 or 2 cc. is given, depending on the apparent severity of the case and the clinical effect. It is possible that certain severe cases will require more. The injections are usually made by the patients themselves, similar to the manner in which insulin is used by diabetic patients. Intravenous injections have been frequently resorted to in an emergency. We have avoided them in general because of the possible excretion of the hormone through the urine, thus resulting in some loss of effect. The material, as made in our laboratory, is painless when injected and appears to keep its potency for a period of at least two or three weeks without preservatives. It is kept on ice in the dark, being warmed up only for the injections.

Certain general principles in the management of the patient should not be neglected. We lay stress on warning against undue physical exertion and on the necessity of proper periods of rest and the avoidance of infections. The constantly recurring anorexia makes the dietary problem a very serious one. We can confirm in most of our cases the interesting observation of Rogoff on the aversion of the patients for fatty foods. During relapses we believe it is of importance to administer the cortical hormone in large doses as early as possible. We have administered as much as 30 cc. intravenously at a dose, but such large amounts are rarely needed. These relapses often come on insidiously, and due heed must be paid to complaints of weakness, anorexia or nausea. There is no effect within several hours on any of the commonly studied chemical constituents of the blood, including the serum base, lactic acid or potassium, after injection of the cortical extract, either in normal persons or in patients with Addison's disease. Together with the use of the extract we believe that carbohydrates should be given by mouth in as large amounts as may be tolerated, and use should be made of dextrose and salt infusions subcutaneously or intravenously when indicated. Such infusions of fluid by vein must be given slowly and with great care. Hypoglycemia should be vigorously combated, and frequent blood sugar studies are advisable to control the efficacy of treatment. We have recently used continuous intravenous dextrose injection, by the technic of Warthen, with success in the treatment of an abrupt and severe relapse. By this method, not only is a continuous supply of dextrose furnished and hypoglycemia absolutely prevented, but a free excretion of urine occurs at all times. Drugs, such as epinephrine or pituitary solution (ampules of pitressin), for raising the blood pressure may also be given in minute constant amounts in the injection fluid. Their efficacy has not yet been demonstrated. Just as in the case of the experimental animal, these patients are apt to become very cold and require external warmth. Our experience indicates that all the various suprarenal gland preparations are essentially useless, and we believe that large injections of epinephrine should be avoided except in definite circulatory collapse and as an emergency measure only. When administered by mouth in many patients, epinephrine tends to aggravate nausea, if this is already present.

To sum up the situation at the present time, it must be realized that a disease is being dealt with in which remissions and relapses, or "crises," are common and occur spontaneously for reasons that are at present imperfectly understood and often beyond control. It is during these that the disease usually has its fatal termination. We may say with a measure of confidence that the new suprarenal cortical preparation gives promise of being a therapeutic aid of considerable value in averting these acute phases of the disease. Aside from these emergencies the therapy has been most effective in cases treated early in the disease, before severe relapses have occurred. It seems not unlikely that with each successive relapse further toxic damage is inflicted on the portions of suprarenal cortex yet intact. It is not, however, a substitution therapy, as insulin may be considered to be in diabetes mellitus. The blood pressure, while it may improve a few points, does not return to normal levels in any case of Addison's disease so far studied, even after months of treatment; the pigmentation may become appreciably lighter but does not disappear; in our experience the patient does not regain his normal weight; and none have as yet been completely restored to normal strength

7. Swingle, W. W.: Personal communication to the authors.

and vigor. The blood sugar usually remains low, and the patient remains sensitive to insulin. It is doubtless true that many of these cases are complicated by active tuberculosis elsewhere in the body, and it is not reasonable to expect that the progress of these more distant processes may be much influenced.

We have one bilaterally suprarenalectomized adult male dog [8] which has been maintained for one year in perfectly normal condition, to all external appearances, with injections of cortical extract administered twice a day. He has been brought into a condition of severe suprarenal insufficiency on eight different occasions by the withdrawal of these injections. It is of interest that, whereas a latent period of about eight days occurred in bringing about the first attack so induced in this dog ten months ago, at the present time a severe attack is induced by the withdrawal for a period of less than forty-eight hours. The nonprotein nitrogen concentration of the blood in this dog is constantly elevated, and his daily cortical extract requirement at present is double (0.5 cc. per kilogram of body weight) the requirement eight months ago. If relapses in man have any parallel to this observation and are, as in this animal, more and more readily induced, one can foresee difficulties that may be encountered in the treatment of Addison's disease by cortical extract and possibly explain the deaths already observed even when apparently adequate amounts of extract were given.

It is quite obvious, however, that Addison's disease and chronic suprarenal insufficiency in dogs, as produced experimentally by removal of the suprarenal glands, are not identical phenomena. With adequate injections of the cortical extract, and in the absence of infection, with proper food, shelter and exercise, and in hygienic cleanly surroundings, the totally suprarenalectomized dog is restored to his usual vigor, his nutrition, weight and appetite become normal, and his circulation and blood pressure are unimpaired. Pigmentation in man has no counterpart in the animal, even if the latter is observed over long periods. The scattered experiments found in the literature reporting positive results are not convincing.

It is evident that very little is as yet definitely known about this mysterious malady. The essential point of the whole matter lies in the discovery of the exact functions of the suprarenal gland, a matter concerning which physicians are even yet as much in the dark as in the days of Addison. Nevertheless, a significant step has been taken, and we may look forward hopefully to a more satisfactory understanding of the problem at a time not too far distant.

8. This dog was bilaterally suprarenalectomized in two stages by Dr. Hans Widenhorn of the department of surgery.

Pellagra.—The pathology of pellagra is still obscure. The primary lesions are confined to epithelial surfaces without extension to deeper tissues or organs. The cutaneous manifestations are well known, but it is important to note that "lesions of the mouth, tongue, and esophagus are the most constant and consistent lesions of pellagra." I have always been impressed by this likeness to the Plummer-Vinson syndrome, and by the fact that pellagra affects females twice as often as males. The stomach and small intestine show no consistent anatomical changes, but a colitis of variable intensity is present in every case. Peripheral neuritis and psychoses may develop, but there are no tract degenerations of the spinal cord like the subacute combined degenerations of Addison's anemia. Achlorhydria is present in 85 per cent of cases, hypochlorhydria in 9 per cent, and normal gastric secretion in 6 per cent; diarrhea is present in 60 per cent.—Witts, L. J.: The Pathology and Treatment of Anemia, *Lancet*, March 12, 1932, page 549.

THE INTRACAROTID TREATMENT OF MENINGITIS

EXPERIENCES WITH PREGL'S SOLUTION OF IODINE: A FURTHER REPORT

ALBERT S. CRAWFORD, M.D.
DETROIT

In two preliminary communications, I [1] stated my advocacy of the intracarotid route in the administration of chemical antiseptics or serums in certain cases of meningitis (the stubborn meningococcic and all the purulent), septicemia, and brain abscess. I had been discouraged with my previous attempts to assist surgically in the hopeless cases by subarachnoid drainage through trephine openings to cisternal and lumbar needles. It had seemed more rational to administer the medication into the carotid arteries, thereby assuring the immediate contact of the chemical or serum with the whole of the infected area in relatively undiluted strength. Kolmer [2] had just reported some trials on dogs and a few cases in the human being, and the route had been thoroughly tried out in antisyphilitic treatments. He also suggested the use of Pregl's iodine solution [3] in the treatment of streptococcic meningitis.

Feb. 5, 1929, I had an opportunity to use the intracarotid route and Pregl's solution of iodine in a case of staphylococcic meningitis and septicemia in a child of 7. The child recovered. The method was then used in some cases of resistant meningococcic meningitis with such satisfactory results that I [1] published reports of these few cases with the hope that this would stimulate others to try the route and Pregl's solution of iodine. I had previously proved that this solution was safe on dogs in doses then advocated, 20 cc. on three successive days. Several other physicians became interested and applied the method in some cases, with a few startling successes. Dr. Dowman suggested that I report all the cases in one paper and generously offered the results in his cases. Others likewise offered their results for this report. These cases will be grouped by series, rather than arranged chronologically.

SERIES BY AUTHOR

CASE 1.—V. S., a girl, aged 7, admitted to the Henry Ford Hospital, Feb. 3, 1929, with previous osteomyelitis of the right tibia (following a blow) and septic pharyngitis, had developed signs of meningitis seven days before I saw her in consultation. There was marked apathy, retraction of the head, and septic temperature, approaching 104 F.; the first examination of the spinal fluid, blood, throat and wound showed Staphylococcus aureus in all. The spinal fluid cell count was 1,640. The course was unfavorable; the patient became semicomatose. Surgical treatment consisted of drainage of the osteomyelitis on the fourth day, and injections of Pregl's solution of iodine, 5 cc., into each carotid artery on the sixth and ninth days, followed by lumbar punctures. A transfusion of blood was also done. The condition changed definitely after each injection of the iodine solution. There was progressive improvement, and in a few days the general signs of meningeal irritation cleared up. Sepsis continued, however, until a radical operation was performed on the tibia (third week), and

From the Neurological Surgical Division of the Henry Ford Hospital.

1. Crawford, A. S.: Intracarotid Treatment of Meningitis and Experiments with Pregl's Iodine, Tr. A. Resid. & ex-Resid. Physicians, Mayo Clin. (1929) **10**: 129-131, 1930; The Intracarotid Treatment of Meningitis and Experiments with Pregl's Iodine, Wayne County M. Soc. Bull. **21**: 3 (April 15) 1930.

2. Kolmer, J. A.: The Intracarotid Treatment for Experimental Pneumococcus Meningitis, read before the Henry Ford Hospital Medical Society, February, 1929.

3. Prof. Fritz Pregl has stated that this solution is a colloidal iodine solution, representing an aqueous soluble compound containing from 0.035 to 0.04 per cent of free iodine and different iodine salts.

drainage of a left otitis media was established. After this there was a steadily progressive recovery, and the patient was discharged fifty-five days after admission, well except for a small draining sinus of the right tibia and a residual left facial palsy. All these later cleared up.

CASE 2.—G. P., a man, aged 20, admitted, April 28, 1929, a patient of Dr. W. H. Shipton at the Evangelical Deaconess Hospital, had the typical signs and manifestations of meningococcus meningitis. There were 2,300 cells in the first spinal fluid. Medical treatment was active, 565 cc. of specific serum being administered intraspinally and intravenously. After the third day of treatment the course became progressively unfavorable, the patient becoming cyanotic and unable to swallow, and finally unconscious. By the reference of Dr. R. W. Parr I was called to give surgical aid. Pregl's solution of iodine, 10 cc., and specific serum, 15 cc., was injected into each carotid artery, followed by cisternal puncture on the eighth, ninth and eleventh days of the disease. Definite improvement followed each treatment. A left otitis media, suppurative right knee joint and several superficial skin abscesses developed and delayed his final recovery, but the meningitis cleared quite rapidly. The patient made a complete uncomplicated recovery and was discharged on the fifty-second day.

CASE 3.—E. W., a woman, aged 29, admitted to the Henry Ford Hospital, June 19, 1929, had typical signs and symptoms of meningococcus meningitis. The first spinal puncture showed 3,600 cells. The medical treatment was active, consisting of 353 cc. of specific serum given intraspinally, intravenously and by cistern. The course became unfavorable, the patient becoming semicomatose and delirious. The cell counts and cultures indicated poor response to the treatment. Surgical aid was requested and we injected 10 cc. of Pregl's solution of iodine and 15 cc. of specific serum into each carotid artery, followed by cistern puncture on the ninth, eleventh and thirteenth days of the disease. The condition improved noticeably after each injection and the cultures became negative the day after the third injection. The patient made a complete recovery and left the hospital on the twentieth day.

CASE 4.—H. W., a Negro, aged 34, admitted to the Henry Ford Hospital, July 25, 1929, developed signs and symptoms typical of meningococcus meningitis. There were 2,000 cells in the first spinal fluid. The patient was not admitted until the sixth day of the disease. Medical treatment was active, 354 cc. of specific serum being given by the usual routes. The course was rapidly unfavorable. There was marked cyanosis, labored breathing, and finally swallowing became impossible. Cell counts and cultures showed a progressively unfavorable response to treatment. Surgical aid was sought and I gave 10 cc. of Pregl's solution of iodine and 15 cc. of specific serum into each carotid artery on the eighth, tenth, eleventh and thirteenth days of the disease. The patient did improve under treatment and gave promise of recovering, but unfortunately signs of pneumonia developed and he died on the fifteenth day of the disease.

Summary of Cases (Henry Ford Hospital Series)

Case	Age	Sex*	Previous Infections	Cell Count First Spinal Fluid	Culture Spinal Fluid	Previous Medical Treatment	Surgical Treatment, Day of Disease	Surgical Treatment	Subsequent Cultures	Course	Result
1	7	♀	Septic pharyngitis, septicemia, osteomyelitis of the right tibia	1,640	Staphylococcus aureus	Transfusion, forced fluids, drainage of osteomyelitis; lumbar puncture	6th	Pregl's iodine sol., 5 cc. into each carotid artery on 6th and 9th days	Negative 16th day	Favorable	Recovered; went home, 55th day
2	20	♂	.....	2,300	Meningococcus	Forced fluids, 565 cc., antimeningococcus serum by vein and intraspinally	8th	Pregl's iodine sol. and specific serum, 10 cc. of each into each carotid artery on 8th, 9th and 11th days; lumbar and cistern puncture	Negative 9th day	Favorable	Recovered; went home, 52d day
3	29	♀	.....	3,600	Meningococcus	Forced fluids, 353 cc. specific serum given by vein, cistern puncture and intraspinally	9th	Pregl's iodine sol., 10 cc., and specific serum, 15 cc., into each carotid artery followed by cistern puncture on 9th, 11th and 13th days	Negative 14th day	Favorable	Recovered; went home, 20th day
4	34	♂	.....	2,000	Meningococcus	Forced fluids, 354 cc. specific serum given by vein, cistern puncture and intraspinally	8th	Pregl's iodine sol., 10 cc., and specific serum, 15 cc., into each carotid artery on 8th, 10th, 11th 13th days followed by cistern puncture	Remained positive	Improved, then developed pneumonia	Died, 15th day
5	30	♂	Infected operative wound from sacro-iliac arthrodesis	8,000	Staphylococcus aureus and Proteus ammoniae	Forced fluids, methenamine, lumbar punctures	3d	Pregl's iodine sol., 15 cc., into right cartoid artery on 3d, 4th and 5th days followed by cistern puncture	Remained positive	Unfavorable	Died, 6th day
6	2	♀	.....	21 (higher later ?)	Nonhemolytic streptococcus	Forced fluids, lumbar puncture	2d	Pregl's iodine sol., 5 cc., into right carotid artery on 2d, 3d and 4th days	Negative 4th day	Favorable	Recovered; went home, 28th day
7	40	♀	Ethmoid sinusitis, maxillary sinusitis, orbital abscess (all post-traumatic)	320 (higher later)	Hemolytic streptococcus	Forced fluids, transfusion, lumbar puncture, drainage of abscesses	2d	Pregl's iodine sol., 10 cc., into each carotid artery on 2d, 3d and 4th days; lumbar continuous drainage 4th day	Remained positive	Unfavorable	Died, 34th day
8	58	♂	Right mastoiditis, right labyrinthitis	5,100	Hemolytic streptococcus	Forced fluids, lumbar puncture	2d	Pregl's iodine sol., 10 cc., into each carotid artery on 2d day	Remained positive	Unfavorable	Died, 3d day
9	23	♂	.....	135 (over 2,000 later)	Staphylococcus aureus	Forced fluids, lumbar puncture	2d	Pregl's iodine sol., 10 cc., into each carotid artery on 2d, 3d and 4th days; continuous suboccipital drainage from 2d day	Negative by 6th day	Favorable	Recovered; went home, 65th day

* In this column, ♂ denotes male; ♀, female.

CASE 5.—S. M., a man, aged 30, admitted to the Henry Ford Hospital, Dec. 12, 1930, had had right sacro-iliac arthrodesis for sacro-iliac pain, with sacralization of the left fifth lumbar vertebra. The wound became contaminated in the postoperative course, and meningitis resulted. The spinal fluid showed 8,000 cells. The culture was Staphylococcus aureus and Proteus ammoniae. He became progressively worse, the temperature rising to 106 F., with delirium and marked toxicity. Pregl's solution of iodine was given by Dr. C. I. Allen, 15 cc. into the right carotid artery on three successive days. The patient seemed somewhat improved after each injection, but it was not for long; he died the day after the third injection.

CASE 6.—J. L., a girl, aged 2, brought to the Henry Ford Hospital, Dec. 30, 1930, showed signs of infection, which soon became localized to the brain, together with convulsions and right sided twitchings, irregular respirations, vomiting and a rigid, retracted neck. A positive Kernig sign led to a spinal puncture, which showed 21 cells and yielded nonhemolytic

streptococci on culture. Surgical treatment was instituted at once; 5 cc. of Pregl's solution of iodine was injected into the right carotid artery by Dr. C. I. Allen on the second, third and fourth days of the disease. Lumbar punctures were done daily. She improved markedly after each injection and the culture was negative after the third day. Clinically, she recovered from her meningitis. The temperature went down almost to normal, but her pulse remained up (120-145). The temperature again became septic on the eleventh day of the disease and there were a few convulsions on the thirteenth day. She seemed better for four days and then became listless, with a temperature up to 102 F. She showed some weakness of the right extremities and had an occasional convulsion. Spinal fluid cultures remained negative, and no signs of meningitis returned. She left the hospital the twenty-eighth day and has been seen several times since. She still has transitory periods of slight cortical irritation but otherwise seems quite well.

CASE 7.—K. B., a Negro woman, aged 40, was brought to the Henry Ford Hospital, Jan. 25, 1931, after a serious automobile accident. Her head and face were badly injured; roentgenograms showed compound comminuted fractures of the left frontal region into the orbit, left maxilla, left zygoma, nasal and ethmoid bones, and of the mandible. She was bleeding from both ears. She did well for sixteen days, although there was a rise in temperature from the day of admission, and she complained of headache after the second day. There were infections in the left orbit, maxillary sinus and left frontal region which required operations. In spite of these she did not show signs of meningitis (no neck rigidity; spinal fluid cultures were repeatedly negative), but she finally became irrational and developed twitchings of the face. The temperature had remained septic. On the twenty-sixth day there was rigidity of the neck. The spinal fluid cell count was 320, and later several thousand. Hemoglobin and cultures showed hemolytic streptococci. I then injected 10 cc. of Pregl's solution of iodine into each carotid artery on the twenty-sixth, twenty-seventh and twenty-eighth days, and the last day I gave her continuous drainage through a lumbar laminectomy. The day after this she became comatose, and she died on the thirty-fourth day of the disease.

CASE 8.—J. M., a man, aged 58, admitted to the Henry Ford Hospital, June 25, 1931, had had a right otitis media for one month, followed by a right mastoiditis for one week, and was brought to the hospital with signs and symptoms of right acute labyrinthitis of three days' duration, and the next day showed early signs of meningitis. The organism was hemolytic streptococcus. There were 5,100 cells in the first spinal fluid. His general condition was poor and he rapidly became very toxic. Surgical treatment consisted of drainage of the right mastoid and injection of 10 cc. of Pregl's solution of iodine into each carotid artery on the second day after the onset of signs of meningitis. He did not improve at all; he became rapidly worse and died the next day.

CASE 9.—C. McC., a man, aged 23, admitted to the Henry Ford Hospital, Aug. 3, 1931, had a suboccipital exploration and decompression, August 11, for a cerebellar tumor. The postoperative course was uneventful until the eighth day after operation, when signs of sepsis appeared; the source probably was a delayed leak of spinal fluid from the lower angle of the incision, which was infected by too extensive a shave. A lumbar puncture gave 135 cells, later over 2,000, in the fluid and on culture yielded Staphylococcus aureus. The temperature went to 102.8. That same day a bilateral intracarotid injection of 20 cc. of Pregl's solution of iodine was made and repeated on three successive days. The opening of the wound was enlarged enough to permit of free drainage of spinal fluid. In nine days the temperature came down to nearly normal and he appeared better; then it went up to over 104 F., but came down after further drainage of the spinal fluid and in two more days the temperature subsided, and he recovered from the meningitis.

Besides these cases, Pregl's solution of iodine was tried in two cases of brain abscess. They progressed satisfactorily, until the patients died from rupture of secondary abscesses. It was also used intravenously in a stubborn case of streptococcus septicemia, with recovery of the patient.

SERIES BY KOLMER

CASE 1.—A woman [4] with streptococcus meningitis secondary to sinus infection was given Pregl's solution of iodine and acriflavine hydrochloride intracarotidally, followed by cisternal and spinal drainages. Improvement was so prompt and marked that no further treatment was given and she appeared to be cured. Unfortunately, later symptoms of cerebral abscess developed and she died.

This case was first treated a few days before I began treatment in my first case.

Later, Kolmer [5] reported seven other cases of streptococcus meningitis treated by the intracarotid route, three in children and four in adults. All were secondary to otitic or sinus infections. By the intracarotid route, two patients were injected with polyvalent antistreptococcus serum, and the other five with Pregl's solution of iodine or acriflavine hydrochloride. Each injection was followed by cisternal or spinal drainage. In one case, in a child of 18 months, fifteen injections were given. Five patients showed temporary improvement; one patient even left the hospital, but unfortunately was brought back later with a fatal infection, which proved to be a cerebral abscess. None of the patients recovered.

Four cases of pneumococcus meningitis were treated with one recovery. One patient was moribund when first treated; one patient improved so greatly after the first treatment that he was allowed out of bed but, sixteen days later, relapsed and died with signs of cerebral abscess. The case of recovery was reported by Kolmer in detail:

CASE 2.—A woman, aged 25, had a meningitis complicating a pneumonia. There were seven intracarotid injections of Felton's antipneumococcus serum with ethylhydrocupreine hydrochloride followed by spinal drainage. The patient recovered.

CASE 3.—A boy, aged 11 years, with fulminating meningococcus meningitis, had a spinal fluid count of about 11,500 cells. He did not respond favorably to specific therapy, 50 cc. intravenously and from 12 to 26 cc. intraspinally for four days. Bilateral intracarotid injections were given of 10 cc. of serum and intracisternal injections of 3.5 cc. of serum (after cisternal drainage) for three days. A marked reduction in cell count resulted after the first injection and the patient recovered, with partial left sided deafness.

Kolmer attributed the recovery in part at least to the intracarotid and intracisternal routes of administration of medication.

SERIES BY DOWMAN

CASE 1.—A University of Georgia student had a right mastoiditis; his condition was soon complicated by a meningitis. The spinal fluid showed pleocytosis. A culture yielded streptococcus. Surgical treatment consisted of injection of 10 cc. of Pregl's solution of iodine into the right carotid artery on each of six successive days. Continuous lumbar drainage was done. There was improvement after the third treatment. Drainage was allowed to continue for two weeks. There was a recovery without any complications.

CASE 2.—A boy, aged 17 years, seen and treated at the Grady Memorial Hospital, Atlanta, Ga., in February, 1930, had a right otitis media; two days after admission, he developed signs and symptoms of meningitis. The first spinal fluid showed 1,000 cells. The organism was Staphylococcus aureus. Dr. Dowman

4. Kolmer (footnote 2). Kolmer, J. A.; Rule, Anna M., and Madden, Bernard: Chemotherapy and Serum Therapy of Pneumococcus and Streptococcus Meningitis, Intracarotid Treatment for Experimental Pneumococcus Meningitis, Arch. Otolaryng. **9**: 509-527 (May) 1929.

5. Kolmer, J. A.; Rule, Anna M., and Madden, Bernard: Chemotherapy and Serum Therapy of Pneumococcus and Streptococcus Meningitis, Cerebral-Cisternal-Spinal Lavage Method of Treatment of Septic Meningitis, Tr. Am. Laryng., Rhin. & Otol. Soc. **35**: 270-277, 1929; Chemotherapy and Serum Therapy of Pneumococcus and Streptococcus Meningitis, Intracarotid Treatment of Experimental Pneumococcus Meningitis, ibid. **35**: 278-291, 1929.

was called to see the patient on the tenth day. He injected 10 cc. of Pregl's solution of iodine into the right carotid artery. The next day he instituted continuous lumbar drainage. Ten cubic centimeters of Pregl's solution of iodine was given daily for eleven days. The improvement was gradual but definite, and he walked out, completely recovered, forty-seven days after admission.

CASE 3.—A boy, aged 5 years, a patient of Dr. Hines Roberts, admitted to Eggleston Memorial Hospital, Atlanta, Ga., had had a mastoidectomy done for an acute mastoiditis. Two days later, signs and symptoms of a meningitis developed. The first spinal fluid showed 1,000 cells. The culture was streptococcus, but smears were negative. Five cubic centimeters of Pregl's solution of iodine was injected into the right carotid artery. The next day the spinal fluid showed only 240 cells but a culture was positive. Then 10 cc. of Pregl's solution of iodine was injected, and a lumbar puncture was done daily for five days. The course was not favorable. Pregl's solution of iodine, 10 cc., was then given twice daily for five days. The cultures were still positive, and cells were up to 1,000. The smears finally became positive. Continuous lumbar drainage was then instituted. This ceased after two days. The patient became progressively worse and died on the fifteenth day.

CASE 4.—A boy, aged 16 months, admitted to the Eggleston Memorial Hospital, had a mastoidectomy; three days later, signs and symptoms of meningitis developed. The first spinal fluid showed 5,000 cells, and a culture yielded streptococcus. The child was practically dying when first seen by Dr. Dowman. A continuous spinal drainage was done in the suboccipital region, and 10 cc. of Pregl's solution of iodine was injected into the right carotid artery. This was repeated every twelve hours for three injections. The course was rapidly unfavorable, and the child died two days after treatment was begun.

In addition to these cases of meningitis, Dr. Dowman tried Pregl's solution of iodine in two cases of staphylococcus brain abscess; 10 cc. of the solution was injected after drainage of the abscess. Both patients recovered.

SERIES BY L. E. DAVIS

CASE 1.—In a case of cerebral abscess, drainage had been successfully instituted. A culture of the pus yielded hemolytic streptococcus. Meningitis developed later, April 18, 1930. Pregl's solution of iodine solution was given on the fifth day, 75 cc. by the right carotid and 55 cc. by the left, and 240 cc. intravenously—all over a period of twenty-one days. The cell count dropped from 8,500 to 100. Signs of abscess developed. This was drained but the patient died five days later.

CASE 2.—A frank case of meningitis with cultures showing both streptococci and staphylococci. Pregl's solution of iodine was used. There was a remarkable improvement until the patient suddenly developed a spinal block and died.

SERIES BY SPURLING

CASE 1.—A man had a fracture of the base of the skull, with leaking cerebrospinal fluid. A culture of the spinal fluid yielded hemolytic streptococci. He was moribund when first given surgical aid. Ten cubic centimeters of Pregl's solution of iodine was injected into both carotid arteries. He did not improve but died promptly.

CASE 2.—A man developed a left frontal lobe abscess from a previous ethmoid sinusitis. The abscess was successfully drained. The culture was Staphylococcus aureus and B. coli. The abscess apparently ruptured later, and meningitis developed, even though cultures of the spinal fluid remained negative. Two injections of 40 cc. of Pregl's solution of iodine were made into the carotid arteries. He did improve for a while but finally became worse and died on the fifth day.

In another case of hemolytic streptococcus meningitis, treated under Spurling's direction in Lexington, Ky., continuous lumbar drainage was instituted early. Pregl's solution of iodine was not used as none was available. The patient recovered. He [6] reported eight recoveries out of twenty-four cases of meningitis treated with only continuous subarachnoid drainage without any chemical antiseptics or serums being given.

SERIES BY LINDEMULDER [7]

CASE 1.—A young man with meningococcus meningitis was given the regular medical treatment, which was progressively more difficult and ineffectual because the fluid became so thick. He was given one injection of 10 cc. of Pregl's solution of iodine by the carotid artery. He was moribund, however, when it was given. He died two hours later.

CASE 2.—A woman developed a brain abscess from an otitis media. The organism was the hemolytic streptococcus. The patient received two injections of 10 cc. of Pregl's solution of iodine into a carotid artery. For two days the patient appeared to improve, but ultimately she died of a purulent meningitis.

CASE 3.—A patient with encephalitis, which was resistant to all medical treatment, was given five or six injections of 10 cc. of Pregl's solution of iodine intravenously on successive days. The patient died without improvement.

CASE 4.—A young man with meningococcic meningitis, which did not respond favorably to the medical specific therapy, was given 10 cc. of Pregl's solution of iodine intravenously daily for several days. He recovered and was discharged "cured" in eight weeks' time.

CASE 5.—A woman had central nervous system syphilis with severe headaches, which was resistant to antisyphilitic therapy. Ten intravenous injections of 10 cc. of Pregl's solution of iodine were given. The patient's headaches improved during the next three weeks and disappeared entirely within three months. It was thought that Pregl's solution of iodine was a definite factor in this relief.

CASE 6.—A case of Vincent's lung abscess showed considerable improvement with intravenous injections of Pregl's solution of iodine.

COMMENT

I shall not attempt a detailed analysis of these cases. The outcome of such severe infections depends on many factors. There is a variation in the grade of virulence of organisms and a wide variation in the degree of body resistance and response to chemotherapy and serum therapy. I am not able to explain in this series why some patients died and why others, apparently as likely to die, recovered; nor am I able to give a certain evaluation to the different forms of treatment, which were combined in these cases; i. e., chemotherapy and serum therapy intracarotid approach, and subarachnoid drainage (intermittent or continuous). Only with many more cases adequately controlled could one safely estimate the relative merits of the various factors.

Until recently, results from the treatment of meningitis were exceedingly discouraging. Specific serum therapy has wonderfully improved the mortality rate in the meningococcic form. Kolmer and others doing research in immunology deserve great credit for restoring the hopes of ultimate victory over the other forms of meningitis. The final solution will probably depend on their working out specific remedies, chemical, serum or vaccine, or all combined. They have already made definite progress along these lines, and much should come of their investigations. Recently, Kolmer and Amano [8] have reported encouraging results with prophylactic treatment against meningitis. Their recommended procedures should be carefully considered by internists and otolaryngologists. The importance of their work cannot be overemphasized.

6. Spurling, R. G.: Surgical Treatment of Meningitis, with Report of Cases, Kentucky M. J. **26**: 242-250 (May) 1928. Also later personal communication.

7. This group of cases is from the University of Michigan School of Medicine, Department of Neurology, reported by F. G. Lindemulder in February, 1931.

8. Kolmer, J. A.: Intracarotid Method of Treatment for Meningitis with Recoveries, J. A. M. A. **96**: 1358-1361 (April 25) 1931. Kolmer, J. A., and Amano, K. W.: The Specific Prophylaxis of Pneumococcus and Streptococcus Meningitis, Arch. Otolaryng. **14**: 125-138 (Aug.) 1931.

I believe that there will always be the need for surgical assistance in the treatment of certain cases of meningitis. Fibrinous exudate at times blocks communications early or prevents adequate distribution of the injected remedies. That is when the intracarotid route of treatment becomes invaluable. By this method of administration a remedy might be made effectual when it would otherwise be a failure. This would seem to be the most direct and certain approach to the infected tissues of the brain and membranes in meningitis.

I believe that in the treatment of this condition the internist, the immunologist and the surgeon should all combine efforts, and this from the very start of the disease. Diagnosis should be speeded up, as hours count. If an accurate bacteriologic diagnosis can be made before the onset of meningitis, much valuable time will be saved. As soon as a definite diagnosis is made, prompt and adequate drainage should be instituted. Continuous drainage is probably best. If done through needles, the punctures should be performed regularly; i. e., three or four times in twenty-four hours, with complete drainage. Fluids should be forced and transfusions given. The therapy should be as specific as possible but by all means should be promptly given. We should be willing to combine different forms of treatment if each offers to help, and not hang on "blindly for a turn for the better" if one form is not helping. The condition is such a desperately severe one that it calls for heroic treatment from the start. In certain types, surgery has definitely helped and should be given an early trial if the case is not likely to respond to medical treatment. I doubt that an operation is justified when the patient is moribund, or if it is late in the disease, except possibly to give continuous drainage for the sake of comfort.

Regarding Pregl's solution of iodine, as mentioned in my preliminary report, more experience will be necessary to test it out thoroughly. It is safe in doses of 20 or 30 cc. daily for three or four days. With that dosage and duration there should be some improvement if it is going to help. With dogs and guinea-pigs it does not seem to harm the brain or nerve tissues even in quite large doses (in dogs, from 90 to 100 cc. for three or four days). But in large doses over a longer period (in dogs, 50 cc. for from six to eight days), it does cause a slight glomerular and tubular nephritis. A young girl recently treated with 50 cc. of Pregl's solution of iodine on three successive days for a virulent hemolytic streptococcus septicemia showed an acute hemorrhagic nephritis at autopsy. The iodine solution may have been the irritative factor affecting the kidneys in this case. I have recently heard of a rapidly fatal termination when the solution was injected into the cisterna. So, one must realize that it is a chemical that can be tolerated for a short time safely but, with prolonged or more excessive use, may result in some damage to the kidneys. There is practically no tendency to thrombosis of vessels at the site of injection. I question the value of prolonged use of this or any one chemical, if it does not result in improvement in the first few days.

I stress, with Kolmer, the value of prompt and radical treatment, if it is to be of any use.

SUMMARY

Six series with a total of thirty-one cases are reported from six clinics, with a combined treatment, which consisted of intracarotid injections of Pregl's solution of iodine alone or with specific serums, or other chemotherapy. The injections were usually followed by either repeated lumbar or cistern punctures or continuous subarachnoid drainage. Twenty-five cases were nonmeningococcic, with six recoveries (24 per cent). Six were of the meningococcic type, which had shown unfavorable response to specific medical treatment, with four recoveries (66.7 per cent). Pregl's solution of iodine was used in five cases of brain abscess, with two recoveries (Dowman's). It was also used in three cases of septicemia with two recoveries (author's), one case of encephalitis with death, and one case of Vincent's lung abscess with improvement.

These cases are reported for the sake of record and with the hope that others will try out, in suitable cases, this combined method of treatment.

CONCLUSION

As stated before, Kolmer deserves the credit for the stimulus of the first case, for urging the combined intracarotid route, and for the trial of Pregl's solution of iodine. Our combined trials have given enough encouragement to justify further efforts. More cases should be tried under varying conditions, so that there may be sufficient data to give more reliable guidance. I would urge the closest cooperation between the internist, the immunologist and the surgeon in combating this terrible complication of infection.

THE MUSCLE FACTOR IN ADOLESCENT SCOLIOSIS

EMIL HAUSER, M.D.
CHICAGO

Scoliosis is today as much a problem as ever. No solution offered so far has stood the test of time. Various therapeutic measures have met with enthusiastic approval, only to be discarded later as inadequate and far below the original expectations. Nevertheless, certain facts have gradually been established, some of which pertain to the so-called adolescent or static scoliosis.

The rôle that the muscles play in the etiology and treatment received some consideration from the pioneers (Haglund and Lorenz [1]). They understood the changes in function as well as the altered contour of the back. Structural weakness frequently has been found associated with functional changes in scoliosis.[2] Curvatures have been found to arise as the result of inadequate functional capacity of the structures. This functional insufficiency is sometimes referred to as a decompensation.[3] The primary rôle in the development of a decompensation of adolescent scoliosis is played by the muscles. Muscular insufficiency is thus the principal factor in the etiology of adolescent scoliosis. With this idea in mind a practical method of treatment was derived, a description of which is supplemented by the report of the results obtained in forty-two cases.

Muscular insufficiency may be due to a lack of sufficient strength, to an excessive strain, or to a combination of the two. It is possible to diagnose the factors that cause a muscular insufficiency. The early recognition and elimination of these factors can prevent the occurrence of adolescent scoliosis. There are many

1. Haglund, Patrick: Die Entstehung und Behandlung der Skoliosen, Berlin, S. Karger, 1916.
2. Schanz, A.: Die Lehre von den statischen Insufficiency-Erkrankungen mit besonderer Berücksichtigung der Insufficientia vertebrae, Stuttgart, Ferdinand Enke, 1921.
3. Steindler, Arthur: Treatment of Scoliosis by So-Called Compensation Method, Journal-Lancet 47: 295-299 (July 1) 1926.

conditions that decrease the normal strength of the muscles of the back. Rapid growth that occurs during the period of adolescence is one of the most frequent; all debilitating diseases lower the strength of the back, which accounts for postscarlet fever scoliosis. Children physically below par develop scoliosis in a similar manner. Failure of sufficient structural development in the muscles of the back is often traceable to lack of fresh air and sunshine, proper food and physical exercise. The introverted child with studious indoor tendencies and poor muscle condition is very prone to lateral curvatures of the spine. An excessive strain on the muscles of the back may be the result either of a prolonged effort or of an increased load.

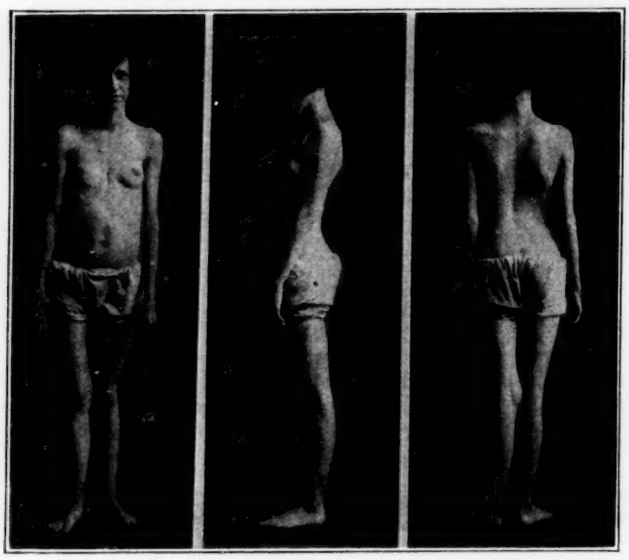


Fig. 1.—Patient with adolescent scoliosis and muscular insufficiency before treatment.

The primary function of the back is to hold the erect position of the body. If this function is unduly prolonged, a strain will result. The exertion required to hold an erect position has been experienced by all who have stood at attention for a long time. To sit at attention is not much easier; yet, the growing child in school not infrequently is made to hold the erect position for hours at a time. It is not to be wondered at, therefore, that public school statistics show such a high percentage of lateral curvatures.

The normal load may be not only prolonged but also actually increased. Unilateral increase of the load is readily conceived of as a possible cause of scoliosis. The unilateral load, however, plays a comparatively minor rôle. Any excessive load will act as a strain and tend to cause decompensation. Excessive body weight may thus be a factor, but more important are the extraneous burdens. The adolescent girl who constantly carries a child about or the growing youth who learns a trade is subject to scoliosis. All the various circumstances that increase the load or decrease the strength of the back may act as factors in the etiology of simple scoliosis. Usually a combination of factors is required, and each factor assumes a different degree of importance in the individual case. A careful history and physical examination, as a rule, reveal the etiologic factors of the so-called adolescent scoliosis.

The adolescent scoliosis in its incipient stage is a simple C-curve. Unfortunately it is not frequently seen in this early stage. The right dorsal and left lumbar curves compose about 80 per cent of the cases; the other 20 per cent show inverted curves, left dorsal and right lumbar. Theories to explain the reason for this formation of the curves have remained unproved, but an asymmetrical growth of the body is a possible cause. Likewise the answer to the question as to which is the primary curve has not been established. The curvature usually grows progressively worse if left untreated. Rotation appears by the time a compensatory curve develops. In the dorsal area the ribs emphasize the rotation of the vertebrae and the chest deformity is marked; in the lumbar region the transverse processes are comparatively short and the rotation, though equally great, is not apparent. The roentgenograms reveal lumbar rotation with the transverse processes in an oblique position. In the usual form of scoliosis the left shoulder droops lower than the right; the right posterior chest bulges, while anteriorly it is depressed; the right scapula is more prominent than the left; and the left chest wall is compressed posteriorly with ribs curved downward. The vital capacity is diminished.[4] Often the shoulders droop forward and the normal lumbar curve is accentuated, while the abdomen tends to be pendulous. Muscle tone is impaired, the pelvis tilts to the right, and the left hip seems prominent. Fatigue and backache, the symptoms of insufficiency, are frequently present. In very severe cases, pain may occur as a result of nerve impingement. The insufficiency is measurable by the amount of voluntary correction possible. The child stands in his usual position and then makes himself as tall as possible. There is then a direct proportion between the increase in height and the amount of insufficiency in the muscles of the back. In many cases a deformity exists without insufficiency. In these cases the insufficiency has been compensated for by a curvature and fixation.

Many of the etiologic factors are preventable. Recognition of the presence of a beginning curve will greatly decrease the frequency of adolescent scoliosis. The responsibility falls largely on the school nurse and the gymnasium instructor as well as on the physician. They should all be familiar with the predisposing factors and able to recognize them, and experience will soon familiarize them with an insufficiency of the muscles of the back. During the examination of a child, sufficient exposure of the body should be obtained to permit a view of the gluteal cleft as well as the back. An oblique course of the gluteal cleft helps to identify a pelvic tilt. Granted, then, a knowledge of possible factors, a thorough physical examination and the case history, the diagnosis of adolescent scoliosis becomes a simple matter.

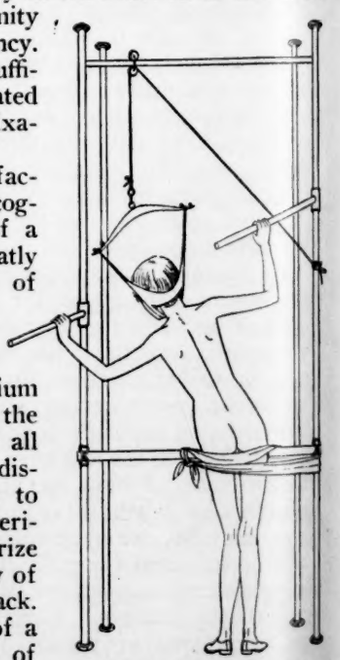


Fig. 2.—Apparatus with patient in position for application of corrective cast.

4. Flagstad, A. E., and Kollman, Sara: Vital Capacity and Muscle Study in One Hundred Cases of Scioliosis, J. Bone & Joint Surg. **10**: 724-734 (Oct.) 1928.

Once the predisposing factors are discovered, treatment is directed against them. The strained back is given rest; overexertion is guarded against. The child remains under supervision until normal strength is regained. The child with a food deficiency is placed on a high caloric, high vitamin and, if indicated, anti-

Fig. 3.—Patient with plaster-of-paris jacket applied.

anemic diet. The shut-in child with sedentary habits is encouraged—or induced by means of games and companionship—to exercise in the open air and sunshine. In addition, a course of setting-up exercises is prescribed. This is, in a way, a preventive treatment of adolescent scoliosis.

Once a deformity has developed, however, treatment has a twofold objective: first, correction, and, second, removal of the disability. Solicitous parents readily understand the significance of a deformity, but the disability resultant on an insufficiency needs emphasis. To the child who will be dependent on a back of normal strength for his livelihood, function is paramount. Fortunately, the appearance always improves with the removal of the functional insufficiency. The history of the child with a scoliotic deformity is taken to ascertain the causative factors of the scoliosis. The physical examination must include the weight and height of the child, and tests for anemia and cardiac sufficiency. To secure the full cooperation of the parents and the child, the treatment proposed is clearly explained. After cooperation is assured, treatment is started.

The patient comes to the hospital for the application of a cast (fig. 1). A simple upright frame is used and an additional board is fastened just below the level of the groin of the patient, who stands against the board. Sufficient raise is then put under the foot of the shortened limb to level the pelvis. A muslin bandage about 2 inches in width is wrapped around the patient and the cross-bar, and the pelvis is more or less fixed. With a right dorsal scoliosis the bandage also includes the right side of the frame, while with the inverted type the left side of the frame is included. A Sayre type of overhead extension is then fitted beneath the occiput and underneath the chin. The extension is drawn forward and, in case of a right dorsal curve, well over to the left; then, by means of ropes and a pulley, the body is extended, drawn forward and to the left. The right hand grips the frame high and forward; the left holds the frame posterior to the midplane and below the level of the shoulder (fig. 2). The body is snugly covered with a stockinet, and a layer of sheet-wadding is smoothly fitted over the stockinet. Pads of felt protect the iliac crests, the sacrum, and the ribs over the convexity. A 6 inch width of plaster of paris is carefully but quickly wrapped and molded onto the body. The orthopedist sits behind the patient and the assistant in front. One nurse wrings plaster while a second nurse stands by to adjust the extension and rub plaster. As soon as the plaster sets, the patient is released. The cast is trimmed so that the arms can move freely and the patient can sit comfortably. No more than is necessary is trimmed from the lower margin. Several hours later, a window is cut in the cast over the epigastrium to permit free respiration and allow for a full stomach (fig. 3). The child is allowed a day or two to get accustomed to the cast and then the exercises are started. Most of the patients leave the hospital the same day. The leveled pelvis is made into a fixed point by means of the attachments previously mentioned. About 75 per cent of the motion of the back is in the region of the lumbar spine. The mobility in the lumbar area permits the child to lean to the side and straighten the curvature. After the cast has been applied the child tries to stand erect, exerting force against the fixed dorsal curve. In this way normal standing and sitting tend to correct the lateral curvature. When the patient leans forward, the same corrective forces can be brought against the kyphosis. With the arms as levers and the pelvis fixed, derotation

Fig. 4.—The same patient after treatment, free from all symptoms.

is brought about by twisting the trunk in the opposite direction. The direct extension increases the length of the back and tends to correct the curve (fig. 4).

The exercises are definite and the children are taught to carry them out accurately. Correct posture is the first lesson. Extended to his full height, the child balances a sand-bag on his head. The sand-bag is 6 inches square, has a depth of 2 inches, and weighs

about 7 pounds (3.2 Kg.). A series of simple exercises is set and the child retains the new posture throughout each exercise. The arms are fully extended and brought up overhead. The instructor holds the cast as the child, with arms extended overhead, leans back and to the right side and further corrects the deformity. With full extension again the child leans forward, swings to the right, rotates, and then reverses the movements to return to the original position. The body is held erect as first the left and then the right lower limb is raised forward, to the side, and to the rear. Lying flat on his back the child raises both lower limbs with the knees fully extended. The arms are folded over the chest and the child sits up. Effort is encouraged, exactness demanded, and muscle coordination and rhythm are taught; more exercises are added as the child grows stronger; the sand-bag is made firmer and heavier, and dumb-bells are advised. The child takes part in regular gymnasium exercises at the school and plays games with the other children. Once a week he reports for observation. The exercises are further supervised through cooperation of the gymnasium instructors, nurses, physical therapists and parents.

At intervals of from three to six weeks the cast is changed. More correction is gained each time. When sufficient correction has been obtained, a form-fitting corset serves as a removable support. The corset is gradually discarded and is left off entirely when complete muscular sufficiency has been reestablished. As long as the exercises are continued, muscular strength will guard against a recurrence of symptoms and of the deformity.

The results, in a study of forty cases of adolescent scoliosis treated with this method since June, 1927, have surpassed expectation. In this series, twenty-nine of the patients were females and eleven males, a ratio of three to one. The age of the patients at the time treatment was started ranged from 10 to 17 years. Four patients under treatment during this period and not included in this series were over 21 years of age. These patients were treated for symptoms of insufficiency. The object of treatment in these cases was a firm fixation, and relief of symptoms was obtained. The time of onset is ascertained only with difficulty, the onset is so very insidious. From the history given by the child and the parents the period of onset in 75 per cent of the cases was between 10 and 14 years of age.

The most consistent etiologic factor elicited was rapid growth. The parents in nearly every instance commented on the rapid growth of the child. Eighty per cent of the children were underweight and below par physically. Of these, the majority were of sedentary tendency, and eight were definitely introspective individuals. Pneumonia, scarlet fever and prolonged bronchitis repeatedly preceded the onset of the symptoms in the back.

Of these forty cases only two were of the inverted type, that is, with left lumbar and right dorsal curves; three were simple curves, with the convexity to the right in each instance. It is noteworthy that in these three cases all presented themselves soon after the first symptom was noticed. The proportion of normal right dorsal and left lumbar scoliosis to the inverted type was much greater than is usually given in the statistics. The series is not large enough, however, to attach much importance to this fact. One case had no insufficiency whatever; fourteen were graded with an insufficiency of one on a basis of one to four; twenty were classed as two, and four grouped as three; none of the adolescent scoliotic patients in this series had a total insufficiency.

The treatment consisted of the use of exercises, casts and leather and steel corsets on the principle described. Each patient was regarded as an individual type. The general strength, the morale, the home conditions were all taken into consideration, as well as the type of scoliosis and the question of insufficiency. In two cases a mitral lesion made it necessary to proceed slowly and cautiously with treatment. The school nurse and visiting nurses cooperated in the care of children at the clinics. Once they grasped the principle of the treatment the nurses became interested and as they observed improvement gradually became enthusiastic and a great aid.

It is indeed difficult to set a standard by which the results can be measured. The chief reason for this is that there are many factors involved. The correction of the deformity or anatomic improvement was first graded by the nurse in charge of the case, and then all cases were personally tabulated and rechecked. The results in correction of the actual deformity showed no improvement in two cases, fair improvement in nineteen cases; seventeen cases were classed as good, and two as perfect.

With regard to the impaired function, the insufficiency was relieved in three cases, improved so that normal function could be resumed without symptoms in sixteen cases, and absolutely cured in twenty-one cases. All the patients learned to coordinate their muscles better; in some this change was striking. With increased capacity of the back came improved general strength and, as a rule, steady increase in weight. The children became more active. The sedentary and introvert type of child invariably became more alert and gained poise with self assurance. No complications of any significance arose as a result of the treatment. There was not a single instance of a pressure sore to delay the course of treatment. The children were not handicapped but in most instances felt some relief and an increase in functional capacity soon after the first cast was applied. They continued at school, took part in regular gymnasium exercises and played with the other children. The deformity was corrected and the symptoms relieved in a simple manner; there was no pain; the patients did not lose time from their occupations or studies; there was no hospitalization. The cost was very low. The method was remarkably free from complications. The parents as well as the patients were pleased with the results.

CONCLUSIONS

1. Adolescent or static scoliosis is a symptom complex resulting from muscular insufficiency.
2. The etiology of muscular insufficiency can be determined.
3. All the symptoms and signs associated with static scoliosis can be explained on the basis of muscular insufficiency.
4. The treatment of muscular insufficiency relieves the symptom complex formerly called adolescent scoliosis.
5. The early elimination of the etiologic factors of muscular insufficiency prevents the occurrence of the scoliosis deformity.
6. A method has been devised to treat muscular insufficiency successfully and to correct the curvatures of the spine.

8 South Michigan Avenue.

VITAL FUNCTION STUDIES

IX. FAILURE OF HEARING IN THE YOUNG: A STUDY OF A RURAL COMMUNITY

ALLAN WINTER ROWE, PH.D.
AND
DANA W. DRURY, M.D.
BOSTON

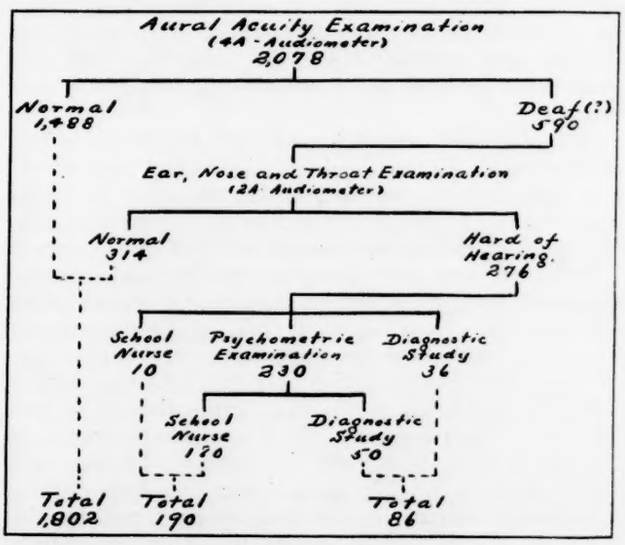
During the winter of 1928 we, together with a small group of associates, began an investigation on the question of partial deafness as a problem in education. As the study was originally outlined, and ultimately carried out, it called for extensive cooperation from a number of independent groups, to all of whom, to be named seriatim in the body of this paper, we are indebted. The results of the general research will be presented in this communication in preliminary form.

Some years ago, one of us[1] showed that in cases in which anatomic defects or concrete pathologic changes could be eliminated the level of aural acuity, as measured by audiometric devices, was an index of the nutritional level of the individual. With this as a starting point, the succeeding phases of the study may be enumerated as (*a*) the individual examination of all subjects showing apparent hearing defects of appreciable magnitude, (*b*) the psychometric examination of all in whom the report of hearing defect was apparently confirmed, (*c*) reference to school nurse of all children the study of whom showed concrete reasons for their defects, and (*d*) complete diagnostic study of those children who demonstrated departures from the physical or mental norm the etiology of which had not been established by the earlier examinations. The general outline of the study with the numerical results is shown in the chart.

Two typical and reasonably adjacent Massachusetts rural communities were selected; namely, the towns of Acton, Ayer, Bolton, Carlisle, Groton, Harvard, Littleton and Stowe in Middlesex and Worcester counties, and Grafton with the adjacent towns of North Grafton, Fisherville and Saundersville, all in the latter county. These are designated as typical, as they embrace both manufacturing and farming communities, populated, on the one hand, by descendants of the early colonial settlers, and, on the other, by a foreign language group deriving from relatively recent immigration. The scatter of the latter group is considerable and embraces a variety of racial stocks.[2]

Eighteen schools participated in the investigation, the pupils ranging from the third to the ninth grade, with several high school groups in addition. Emphasis was laid on the younger groups.

The initial examination was conducted by Mr. N. N. Love, superintendent of the schools of Harvard, Littleton, Bolton, Carlisle and Stowe. As the details of this phase of the study will be reported by him in collaboration with one of us (Drury), only a brief summary need be given here. The instrument selected was the 4-A audiometer, designed and issued by the Bell Telephone Laboratories for this purpose.[3] The instrument is essentially a phonographic apparatus which repeats certain series of numbers; these are transcribed by the listeners. Each of the latter is connected with the machine through a specially designed transmitter, thus permitting the testing of each ear separately. The use of more or less complex figure series adapts the instrument to children at various educational stadia, while its method of operation permits the simultaneous testing of a group of subjects. The instrument used here was provided with forty outlets accommodating as many children. The acuity is determined by the accuracy with which the child transcribes the numbers as transmitted by the instrument. Whenever possible, the test was repeated independently, and the correlation of the two reports determined the individual level of hearing. If no further study is to be made, this point is of the utmost importance, as a variety of factors unassociated with the aural acuity may operate subversively to indicate possible hearing failure where none exists. In the present instance this factor was less important, as all the potentially hard of hearing children were to be carefully examined further. Reference to the chart will show that, of the 2,078 children initially tested, 590, or 28 per cent, gave putative evidence of some depression of hearing power. These ranged naturally from slight to severe impairment in one or both ears. Any child showing a loss of less than three units was placed in the normal group. It should be emphasized that this not only gave evidence of the child's normal hearing but, by implication at least, established normal levels for the general nutrition and for the mental acuity as well.



Scheme of study.

The next phase of the study was conducted by one of us (Drury) and consisted in a careful ear, nose and throat examination of each questionable child, together with an independent audiogram measured with the 2-A audiometer[4] from the same manufacturing source. This is a much more elaborate instrument, actuated by electrical power and producing, through an amplifying system, eight pure tones at octave intervals (64 to 8,196 frequencies). Through rheostat control the energy impressed on the transmitter can be varied over a very wide range. By this means the threshold of hearing

From the Evans Memorial, Massachusetts Memorial Hospitals.

1. Drury, D. W.: Tests of Hearing of Five Hundred Average Ears by the Audiometer No. 2 A, Arch. Otol. 1: 524 (May) 1925.

2. To the school superintendents, Messrs. N. N. Love of Harvard, A. S. Cole of Grafton, C. L. Curtis of Groton, F. C. Johnson of Ayer, and C. W. Lawrance of Acton, we are especially indebted for the cooperation which initially made the study possible and which furthered the work until its completion.

3. Fletcher: Measuring Children's Hearing, Bell Laboratories Record, June, 1926.

4. The audiograms and many of the later technical measurements were made by Miss Mary McManus.

for each frequency in terms of sensation units can be measured and the actual spectrum of hearing plotted on suitably designed forms. The latter more exacting method of approach demonstrated the previous error of estimation of the individual hearing capacity in 314, or 53 per cent, of the group originally adjudged to have shown defective hearing. Examination of the remainder confirmed the initial report and showed that 276 (13.3 per cent) of the children had a hearing defect of sufficient magnitude to warrant report. The ear, nose and throat examination carried out on each child permitted a further subdivision. The full details of this portion of the study are shortly to be presented elsewhere. Thirty-six of the children showed a number of defects, actual or potential, and of an unestablished etiology. These were referred direct for the more elaborate and complete diagnostic studies to be discussed later. The remainder of the group, 240 in number, had obvious and correctable defects, such as infected tonsils, adenoids, discharging ears and poor teeth, all falling in the province of the school nurse, for reference to the individual school physician. Ten of these were referred direct, the presenting condition being uncomplicated and susceptible of immediate correction.

In testing with the 4-A audiometer and much less markedly with the more elaborate individual instrument, it is clear that the mental reaction time and the level of acuity play an important part in the results obtained. The speed of the gramophone attachment can be varied at will, and for each group a velocity was selected consonant with the average rapidity of transcription normal to the group. A slow child, by lagging, would present an incomplete and imperfect record suggesting, incorrectly, the interpretation of lowered hearing acuity. Quantity production necessarily lowers the nicety and precision of measurement; the instrument, however, is a valuable first filter, and its positive findings are wholly significant. The 2-A instrument, both by the individual character of the measurement and by the inclusion of mechanical devices to lessen the results of overcooperation and undercooperation, both being subversive to accuracy, gives more dependable indications. Even here, however, the subjective element cannot be wholly eliminated. To control this factor, 230 of the children, all of whom had demonstrable physical defects and a fairly well established condition of hard of hearing, were given the advantage of a simple psychometric study.[5]

The complete details of the psychometric study will be given elsewhere. Of the group of 230, 50 gave evidence of an established or a questionable lowering of mental acuity. These, like the 36 previously noted, were recommended for complete diagnostic study. The remaining 180, with no demonstrated psychologic defect, were referred to the respective school nurses for correction of the various conditions elicited by the ear, nose and throat examination.

The examination of this combined group of eighty-six, all of whom had at least a fairly well established failure of hearing and in addition a mental or physical defect of undetermined etiology, constituted the last stadium of the investigation. The methods of approach have been fully described by one of us,[6] and the full details of the study will be published later. A few of the more significant data may be briefly presented here.

The sources from which the subjects derived represented a fair geographic scatter. To carry out the examinations it was found to be more expedient to establish temporary clinics in towns offering hospital facilities, for the conduct of the investigation. Forty-six of the children were assigned to the Ayer Community Hospital[7] and the remaining forty to the Memorial Hospital of Worcester. The program of study included physical examination, medical history, twenty-four hour collection of urine, nitrogen partition, basal metabolic rate, "vital capacity," alveolar carbon dioxide, chemical analysis, morphologic examination and serologic examination of the blood, galactose tolerance test[8] ophthalmologic examination,[8] audiogram, and otologic, rhinologic and laryngologic examination.

Unfortunately, much time had elapsed between the initiation of the research and the operation of the two clinics. Of the eighty-six children referred for study, forty-four, or but slightly more than half, presented themselves for the diagnostic examination. Defection of the individual could be traced to the removal to other towns, the completion of school and entrance into employment, and a variety of other causes among which, regretfully, must be mentioned the lack of cooperation on the part of parents. This could be and was anticipated; it was only one of the several subversive factors encountered. A review of such data as were obtained through the earlier phases of the study throws some light on certain factors in this unstudied group that are suggestive when compared later with those obtained by diagnostic study.

TABLE 1.—*Analysis of Cases Without Final Study*

Mental retardation, established * (I. Q. less than 0.71)	12
Mental retardation, suggested † (I. Q. between 0.71 and 0.79)	17
Congenital syphilis (probable)	3
Dwarf	1
Unclassified	9
	42

* Average I. Q. = 67.
† Average I. Q. = 74.

All of the group were deaf, over two thirds showed an established or a potential mental retardation, and three children exhibited stigmas strongly suggesting a congenital syphilitic condition.

A few of the observations on the forty-four patients who received the diagnostic study, are here recorded. The sex division was nearly equal, there being twenty-three boys and twenty-one girls. The average ages were the same, 13 years, with 9 and 17 the extreme limits. Six of the girls had matured; only one gave a menstrual history that was abnormal. This child reported irregularity with much increased interval and somewhat profuse flow. Over half of the group were underweight, the average being 11 per cent below prediction and many exhibiting a really significant degree of undernutrition. Lung volumes, on the other hand, were closer to pre-

5. For this we are indebted to Dr. Walter M. Dearborn of Harvard University and especially to Dr. Donald S. Snedden, the tragedy of whose accidental death is still newly with us. Dr. Snedden supervised this portion of the work.

6. Rowe, A. W.: Boston M. & S. J. **190**: 291 (Feb. 21) 1924; Endocrinology **12**: 1 (Jan.-Feb.) 1928; **13**: 327 (July-Aug.) 1929.

7. In this work Eugene S. Barry, chairman of the board, Mrs. Hazel P. Hastings, superintendent, and the personnel of the Community Hospital, and Dr. George H. Stone, Miss Hazel Ellis, charge nurse, and the personnel of the Memorial Hospital cooperated; also Dr. William A. Bryan, superintendent, Dr. Francis H. Sleeper, assistant superintendent, and Dr. Harry Freeman of the staff of the Worcester State Hospital. Dr. Freeman and Dr. W. E. Murphy of the Evans staff conducted the clinical studies; Misses Mary A. McManus and Gertrude A. Riley made all the laboratory measurements. Dr. R. H. Hopkins of the Evans staff made all the eye examinations at Worcester.

8. Routine only at the Worcester Clinic.

diction in the main, and many were superior to the calculated normal. The standards were not exacting, however (Dreyer's [9] female B and West's [10] female predictions), the experience of one of us (Rowe) demonstrating that for boys under 15 the predictions based on adult female measurements are most applicable to defining the norm. One fourth of the group showed albuminuria without other significant evidence of renal impairment. One additional patient had a definite and established nephrosis with characteristic signs in the urine. One fourth of the children were glycosuric, an evidence of disturbed carbohydrate metabolism which was confirmed in a number of instances by a lowered galactose tolerance.[11] Nearly half of the group showed a urine residual nitrogen fraction definitely above normal, a condition indicating general metabolic disturbance arising from a wide variety of causes. The average results from chemical analysis of the blood were not remarkable. Secondary anemia was a common observation, 77 per cent of the cases showing hemoglobin contents below the conventional limit of 85 per cent. One third had a slight eosinophilia, reaching from 6 to 10 per cent in a number of instances.

TABLE 2.—*"Local" History*

Hard of hearing	22	Chronic catarrh	5
Tinnitus	13	Recurrent rhinitis	9
Abscessed ears	11	Sore throat (frequent)	13
Headache	8	Tonsil and adenoid operations	29
Vertigo	10		

TABLE 3.—*Physical Examination*

Poor development	16	Infected tonsils	26
Genital arrest	3	Hypertrophic pharyngitis	27
Adenopathy	32	Rachitic residues	5
Nasal obstruction	14	Cardiac murmurs	14
Poor teeth	21	Pathologic appendix	2

Forty-two per cent of the group had basal rates more than 10 per cent below prediction, and from the youth of the subjects and the difficulty of even approximating a basal state during the test, this value must be regarded as a minimum. The undernutrition, demonstrated so widely in the group, undoubtedly played an important rôle.

Only one fourth showed normal observations on eye examination; abnormal pupils and disks, insufficiency of convergence, and enlargement of the blind spot accounted for the majority of the others. The visual fields, in the main, were normal.

The general history showed two cases of premature (seven months) birth and four of severe instrumental delivery. Seven more of the children had a history of severe head trauma, two of an earlier encephalitis, and one had been treated for congenital syphilis. What may be termed the "local" history showed the conditions listed in table 2.

The report of hard of hearing in but half of the group will be commented on later; the other figures speak for themselves. The more significant physical observations are collected in table 3.

The tonsil data are striking; twenty-nine patients had had tonsillectomies, and twenty-six showed infected glands or glandular residues. In addition to significant cervical adenopathy in a large part of the group, two showed axillary and four inguinal involvement. Two cases of chronic appendicitis were discovered.

The chief complaint, as reported by or for the patient, has a social as well as a medical significance. These data may be presented most compactly in tabular form (table 4).

Of the group of five reporting poor school work, the intelligence quotient was determined on four, and gave 69, 78, 79 and 88. Previously unsuspected loss of hearing was responsible for this report in one if not in more of the group. Only one showed established mental retardation. Far more striking is the fact that seventeen, or practically two fifths, of this group of hard of hearing children were reported as having no complaint. In many cases this report was derived from the parents, a few of whom truculently asserted the complete normality of their offspring. This bespeaks a certain lack of perspective on a feebleminded child (intelligent quotient, 0.62), with a hearing loss of twenty-seven sensation units in the right and twenty in the left ear. The added burden in attempting to teach such heavily handicapped children in the regular classes involves a very real social and economic question.

TABLE 4.—*Chief Complaint*

Deafness	16	
Earache, etc.	6	
	—	22
Backward in school	5	
No complaint	17	
	—	22

The end-results of the diagnostic studies remain to be discussed. For a variety of reasons, complete investigations could not be carried out on a few of the children and, as a result, some of them must be designated as unclassified. Many of the diagnoses offered must be regarded as tentative, well supported by the evidence available but lacking some crucial test, such as a lumbar puncture or a roentgenologic examination. Further, in addition to the primary condition as determined, few, if any, of the children failed to exhibit a variety of complications such as focal infections, which could well be the significant factor in determining the hearing failure.

TABLE 5.—*Diagnostic Analysis*

Endocrine:		
Pituitary	7	
Thyroid	5	
Unclassified	2	
	—	14
Not Endocrine:		
Lesions of the central nervous system	17	
Psychosis	1	
Renal	1	
Infections	6	
Syphilis	1	
Unclassified	4	
	—	30
Mental Status		
Retarded, established	6	
Retarded, suggestive	16	
Normal	6	
Not examined	10	

The primary classification and the mental status are given in table 5.

One of us [12] has previously noted an association of endocrine disorders with a portion of those patients

9. Dreyer, Georges; and Hanson, G. F.: The Assessment of Physical Fitness, New York, Paul B. Hoeber, Inc., 1921.
10. West, H. F.: Clinical Studies on Respiration, Arch. Int. Med. **25**: 306 (March) 1920.
11. Rowe, A. W.: Sugar Tolerance as an Aid to Diagnosis, J. A. M. A. **89**: 1403 (Oct. 22) 1927.
12. Drury, D. W.: Boston M. & S. J. **190**: 1029 (June 12) 1924.

presenting progressive deafness. Only four of the endocrine group failed to exhibit definite local or focal infections. With the remaining ten, reasonable conservatism would ascribe the hearing failure primarily to the demonstrated nonglandular pathologic changes.

The group presenting lesions of the central nervous system is not only the largest but the most varied. Seven had a history of severe head trauma, two cases were postencephalitic, one showed established and one probable congenital neurosyphilis, three showed evidence of intracranial pressure, while the remaining four presented clinical and laboratory conditions consistent with and suggesting such a condition without defining its nature or its origin. As with the endocrine group, however, only four are free from a report of definite focal or local infection to which the hearing impairment might well be ascribed. A similar condition is found in the remaining thirteen cases of the nonendocrine group.

COMMENT

Certain conclusions may warrantably be drawn from the results of this study. A very definite number of children have defects in aural acuity which are unsuspected either by their parents or by the school authorities. While such a condition was known in some of the 276 deafened children, it had escaped attention in by far the larger number. Even in the final group, in which hearing failure in many instances was reinforced by mental retardation, 39 per cent reported or were reported as being normal healthy children without complaint.

Hearing demonstrated to be normal by the first test applied is significant, not only of this fact but also through its implication of a generally normal state of metabolism and mentality. Its application will at least indicate a group of children needing further study. And such further study will not only enlist the services of school physicians and nurses for the immediate correction of demonstrable defects but point the way to the further care, possibly by segregation in special classes, of those children needing such special assistance. Included in regular class work, they are a retarding element on fellow pupil and on teacher alike. The recognition of their handicap leads to a betterment in the operation of the general educational program and gives each individual a larger opportunity for the realization of his own potentiality.

It seems possible that these statistics, since they are drawn without selection from a group typical of much of New England, may be of service in evaluating conditions in other communities similarly constituted.

SUMMARY

1. A group of 2,078 children from a typical New England rural district have been examined for hearing acuity by an approximate method, and 28 + per cent, or 590, were found to have probable impairment.

2. Further examination by a more accurate method confirmed the report in 276 cases, the others showing normal hearing.

3. Ear, nose and throat examination showed that thirty-six of the impaired group required further study for physical reasons, while all the remainder demonstrated conditions correctable by the school health authorities.

4. Psychometric study of the latter group showed fifty children with established or possible mental retardation for whom further diagnostic study was recommended.

5. Half of the combined referred groups have been given thorough diagnostic investigation. All were deaf, and practically all showed extensive focal and local infective processes. In addition, fourteen of the group exhibited an endocrinopathy, seventeen had lesions of the central nervous system, and six showed otherwise uncomplicated infections.

6. Only half of the children reported trouble with the ears as a chief complaint, and practically two fifths did not present any complaint whatever.

7. It is concluded that such surveys offer a simple and easily conducted approach to a betterment of the health level of the community and toward the solution of one aspect of its general educational problem.

80 East Concord Street.

THE SPONTANEOUS CLOSURE OF FRESH URETHRORECTAL FISTULA

REPORT OF THREE CASES, WITH PRESENTATION OF A MANOMETER SUPRAPUBIC URINARY DRAINAGE APPARATUS

EDWIN DAVIS, M.D.
OMAHA

My purpose is to submit substantial evidence contrary to the commonly accepted view that simultaneous perforation of the walls of the rectum and the prostatic urethra, in the presence of a dilated and functionless internal vesical sphincter, results inevitably in chronic urethrorectal fistula. The spontaneous closure of existing, fresh urethrorectal fistula, in the three cases here presented, has followed combined suprapubic and urethral urinary aspiration, by means of an efficient and simple apparatus here described. These three patients also received free catharsis, as well as frequent irrigations of the bladder and the perineal fistulous tract. Two of these three urethrorectal fistulas followed perineal prostatectomy. The third followed an attempted repair of a chronic urethrorectal fistula. In all three, at the time the treatment was instituted, there was gross fecal drainage through the suprapubic fistula, as well as both fecal and urinary drainage through the perineum. In each case the internal vesical sphincter was dilated and functionless.

INDICATIONS FOR SUPRAPUBIC ASPIRATION

The problem of urinary drainage following suprapubic cystotomy has received a great deal of attention. As long ago as 1916 I [1] reviewed the rather extensive literature on this subject, describing the various appliances that had been proposed for this purpose, and presented a new apparatus, dependent on slight but constant suction produced by a vacuum bottle. Since then, other more elaborate forms of apparatus have been described, including motor driven pumps, as well as the piping of the ward with suction tubes. By the use of the better of these devices, it is possible to keep the suprapubic incision dry, or almost dry, excepting during the period of time necessary for closure of the fistula following removal of the suprapubic tube. None of these appliances, however, function efficiently with-

From the University of Nebraska College of Medicine.

1. Davis, Edwin: Vesical Drainage: Historical Review and Presentation of a New Apparatus, J. A. M. A. **66**: 1680 (May 27) 1916.

out intelligent care and attention, with consequent loss of valuable time, for a rather unessential purpose. For this reason it seems doubtful whether, in the average suprapubic drainage case, any apparatus, other than an ordinary rubber tube, is worth the effort. This is particularly true since a simple rubber tube ordinarily functions perfectly during at least the first eight or ten postoperative days, while the purse-string suture continues to maintain constriction. In fact, the only urgent need of a drainage apparatus occurs during the interval of several days following the loosening of the purse-string suture, and before healing has progressed sufficiently to tighten the "fit" between the tube and the walls of the fistulous tract.

This statement applies merely in the average case of suprapubic drainage. There are, however, special cases in which there are urgent reasons why efficient suprapubic aspiration should be maintained, and in which this factor comes to be exceedingly important. I refer to patients who have had plastic operations on the urethra, and particularly to cases of urethrorectal fistula, with which this paper deals. It will be explained later why, under certain circumstances, the maintenance of efficient suprapubic aspiration comes to be almost a matter of life and death. Hypospadias cases also require efficient urinary drainage following operation, as well as do those patients whose condition is such that cleanliness and dryness are essential in the prevention of decubitus ulcer. Under circumstances such as these, time and attention, devoted to the intelligent care of a suprapubic drainage apparatus, are well spent.

URETHRORECTAL FISTULA

Only those who have had to deal with urethrorectal fistula are able to realize fully the seriousness of this condition from the point of view of the patient, and the tremendous difficulty of its surgical repair. Of all the nonfatal complications of surgery, I do not know of one that is worse. Urethrorectal fistula is not a menace to life. Yet the patient is almost totally incapacitated, particularly if his condition is complicated by a communicating perineal fistula or by a damaged vesical or anal sphincter, which is usually the case. After months or years of a miserable existence, barred from ordinary occupation and from society, and after a number of unsuccessful operative attempts, it is not strange that the patient should become depressed or mentally unbalanced. To my knowledge, two patients with this lesion, who have come under my observation, had contemplated suicide.

The Young-Stone Operation.—Relief for this hitherto almost hopeless condition was at last offered by the radical plastic operation proposed by Young and Stone [2] in 1913. In brief, the Young-Stone operation consists of a radical perineal dissection, the essential feature of which may be compared to an exaggerated Whitehead hemorrhoidal operation, whereby a cuff of the rectum is dissected free and pulled down far enough so that amputation may be performed above the fistulous opening. Other important features of the operation are (1) suprapubic drainage, (2) urethral closure and (3) the bringing together of fascia and levator fibers in the midline to act as a barrier between urethra and rectum. On account of the inevitable scar tissue, this is an exceedingly difficult and time-consuming operation but promises results if properly performed. In a subsequent paper, published in 1917, Young and Stone [3] reported a total of fourteen such operations, all of which were successful but one. In 1921, I [4] reported an additional three cases, all of which were successful.

Etiology and Prevention.—The explanation of the cause of urethrorectal fistula, following incision into, or injury of, both rectal wall and prostatic urethra, of course lies in the presence of infection and gas under tension in the rectum, together with constant urinary saturation of the tissues. In addition, the close proximity of the two cavities and the thinness of the walls are important contributing causes. Under these circumstances, the formation of a urethrorectal fistula is almost inevitable, no matter how carefully the rectal wall and the urethra may have been closed, unless suprapubic urinary drainage is provided. With a simple suprapubic urinary drainage tube, urethrorectal fistula may be prevented, provided the internal vesical sphincter is intact. Following prostatectomy, however, the internal sphincter rarely functions, at least not immediately, and the essential feature in permitting the closure of the urethrorectal fistula therefore comes to be a matter of efficient urinary aspiration. Furthermore, this must be accomplished in spite of the fact that the internal sphincter is wide open, so that there is no "bottom" to the bladder and therefore no barrier whatever to prevent the urine from trickling constantly from the bladder through the opening in the prostatic urethra, so as continuously to saturate the region of the defect of the rectal wall. The apparatus here presented, whereby constant, very gentle, suction is maintained on the suprapubic drainage tube as well as on a retained urethral catheter (inserted to proper depths) accomplishes this purpose, in spite of the absence of a functioning internal sphincter.

THE MANOMETER SUPRAPUBIC ASPIRATION APPARATUS

Parts.—In addition to bits of standard glass and rubber tubing, shown in figure 1, this apparatus consists merely of an ordinary one-gallon glass jug with a two-hole rubber stopper to fit, a glass T-tube with one arm bent on itself (*T*), an ordinary rubber atomizer bulb with one valve removed (*B*), a standard spring clip or pinch-cock (*C*), and a glass manometer (*M*), with bulbs blown in locations shown in detail in figure 2. The manometer contains about 1 cc. of mercury (*H*), the exact amount varying with each individual manometer, and depending on slight variations in the size of the lower bulb and the height of the upper bulb, for reasons as outlined later. Since this little manometer is the only portion requiring special construction and not available on the market in standard form, it becomes apparent that this apparatus is recommended both by its cheapness and by its simplicity. In case the apparatus is to be employed for simultaneous suprapubic and urethral aspiration, an additional glass T or Y tube is obviously necessary.

The manometer is shown in full sized detail in figure 2, containing about 1 cc. of mercury (*H*), and with a bit of cotton above the upper bulb, to serve the purpose of an air filter (*F*), in order to prevent the mercury from "jumping" by, in case excessive suction should be produced.

2. Young, H. H., and Stone, H. B.: An Operation for Urethrorectal Fistula: Report of Three Cases, Tr. Am. A. Genito-Urin. Surgeons 8: 270, 1913.

3. Young, H. H., and Stone, H. B.: The Operative Treatment of Urethrorectal Fistula: A Radical Cure, J. Urol. 1: 289 (June) 1917.

4. Davis, Edwin: The Young-Stone Operation for Urethrorectal Fistula: Report of Three Cases, Surg., Gynec. & Obst. 32: 225 (March) 1921.

Theory.—The principle on which aspiration depends is very simple. In a word, siphon-flow in tube *P* (leading from the patient) is initiated by the atomizer bulb, and automatically maintained over an indefinite period of time, by the manometer (*M*) as explained hereafter. The jug rests on the floor at the bedside and

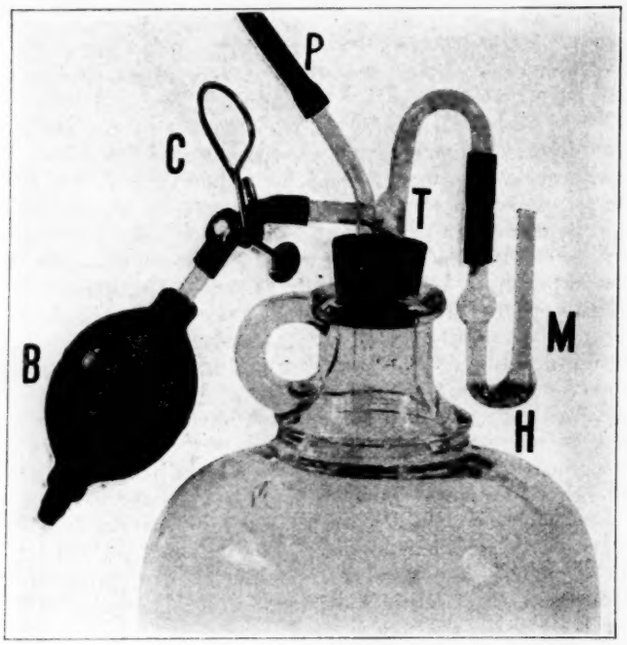


Fig. 1.—The complete manometer suprapubic aspiration apparatus: *T*, T-tube with one arm bent on itself; *B*, atomizer bulb; *C*, spring pinch-cock; *M*, glass manometer; *H*, mercury; about one-third actual size.

is connected with the suprapubic tube or catheter by tube *P*. One squeeze and release of the atomizer bulb lowers the air pressure in the jug slightly below atmospheric pressure, causing the mercury to rise in the limb of the manometer with the upper bulb, and also drawing urine out of the bladder and filling tube *P*, so that siphon flow is established. Too great suction (such as might be caused by "pumping" with the atomizer bulb too many times) is automatically prevented, because the mercury is then drawn up into (so as to spread out within) the upper bulb of the manometer, permitting air to bubble by into the jug. Thus, excessive suction, drawing the bladder mucosa into the end of the drainage tube and defeating the purpose of the apparatus, is impossible.

It is of course apparent that urine will continue to be drawn through tube *P* into the jug as long as the condition of lowered air pressure, created by the one squeeze and release of the bulb, continues. As the urine accumulates in the jug, however, the air in the jug is gradually "compressed," as indicated by a gradual drop of the mercury in the limb of the manometer. The point to be emphasized is that, as diuresis continues, the siphon flow also continues, even after the air in the jug has become "compressed," slightly in excess of atmospheric pressure. Under these circumstances the mercury in the manometer is displaced into the lower bulb, where it expands to form a "lake," permitting the "compressed" air in the jug to bubble by and escape. Thus the air pressure in the jug is maintained at a constant level slightly in excess of atmospheric pressure. This "compressed" air acts as a "cushion" to prevent emptying of tube *P*, with consequent interruption of the siphon flow.

It will therefore be seen that the manometer has a double action in permitting the flow of air either way as it is necessary, and consequently preventing either excessive suction or excessive air compression within the jug. Regardless of the rate of diuresis, the air pressure within the jug remains constant, after there has been sufficient flow of urine to replace the volume of air removed by the one squeeze of the bulb. During periods of rapid diuresis, I have frequently observed the air bubbling by and escaping at such a rate as to cause the manometer to vibrate.

It is to be emphasized that this action all takes place automatically and continues indefinitely. In addition to the necessity for emptying the jug when it fills with urine, and irrigating the bladder as often as is required to prevent clogging of the tube with pus and mucus, the only attention required by the nurse or the physician is the one initial squeeze and release of the bulb.

Operation.—The method of routine operation of the apparatus consists merely of starting the siphon flow after each irrigation. This is accomplished as follows:

1. Insert rubber stopper tightly.
2. Squeeze atomizer bulb (*B*).
3. Open pinch-cock (*C*).
4. Release atomizer bulb.
5. Close pinch-cock.

As the result of the lowered air pressure thus created in the bottle, urine from the bladder is drawn into tube *P* and the siphon flow established.

Essential Precautions.—There are a number of simple but essential precautions to be taken to insure satisfactory results. Chief among these is to make certain that pus and mucus are not allowed to accumulate in the bladder or in tube *P*. Irrigations (including the drainage tube, *P*, as well as the bladder) should be done at least twice daily; more frequently if necessary. The suprapubic tube or catheter should have one opening only and should be adjusted so that its tip lies as near the "bottom" of the bladder as is possible. When an additional urethral catheter is used (connected to tube *P* by means of a Y or T tube), this catheter also should be adjusted so that its tip lies just at the level of the internal sphincter. The preferable size for tube *P* is one-fourth inch, internal diameter. Care must be used in determining which valve of the atomizer bulb to remove (and replace by a bit of glass tubing), in order that the compression and release of the bulb will aspirate air from the jug, rather than pump air into the jug. It is preferable to have two jugs available so that the jug containing urine may be disconnected each morning and immediately replaced by a clean jug, while the drainage tube, *P* is momentarily clamped off.

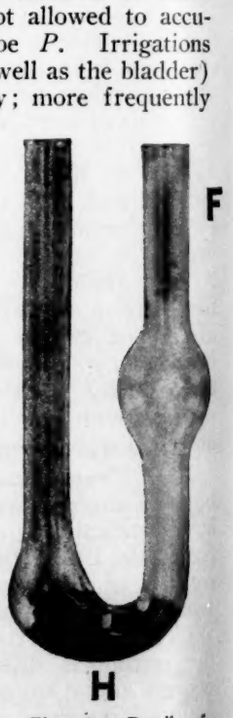


Fig. 2.—Detail of glass manometer: *H*, mercury; *F*, cotton filter (actual size).

Finally comes the matter of determining the optimum amount of mercury to be employed in the manometer for maximum efficiency, since this amount is subject to slight variation with each individual manometer. This may be determined by very simple experimentation, before the manometer has been connected to the appa-

ratus. The optimum amount of mercury is that which rises almost to the upper bulb (before air bubbles by), when gentle aspiration is made on the corresponding limb of the manometer, and which spreads out into a "lake" in the lower bulb, permitting the air easily to bubble by, when the direction of the air flow is reversed. The proper amount may be determined by trial. One may more easily aspirate from or below into the manometer and observe the movements of the mercury at the same time, if a short piece of rubber tubing is employed, from the manometer to the lips.

REPORT OF CASES

CASE 1.—J. V. S., aged 80, underwent perineal prostatectomy, April 20, 1928, resulting in a laceration of the anterior rectal wall during the enucleation of an unusually large and deep seated right lateral lobe. This injury was immediately recognized and carefully repaired, and also a suprapubic drainage tube was introduced. In spite of these precautions, the suture line did not hold. At the end of eight days there was gross fecal drainage through the suprapubic tube, and both fecal and urinary drainage through the perineum. Combined suprapubic and urethral drainage was instituted at this time, by means of the apparatus and technic previously described. Free catharsis was also given, as well as frequent perineal irrigations. The patient was discharged from the hospital four weeks later, with both perineal and suprapubic fistulas healed and without clinical evidence of urethrorectal communication. Rectal examination showed an intact rectal wall. As determined by correspondence several months later, this patient remained well.

CASE 2.—C. N. C. developed a urethrorectal fistula ten days after perineal prostatectomy, Nov. 10, 1928. Since no mishap was observed at operation, the cause of this complication was not determined. This patient returned three months later for the Young-Stone operation for urethrorectal fistula, which was performed, Feb. 23, 1929, and which resulted in complete failure, owing to inability of the surgeon to bring the rectal wall down without tension. After several days, suprapubic fecal drainage and perineal fecal and urinary drainage recurred. As in case 1, complete spontaneous healing took place four and one-half weeks later, during which time combined suprapubic and urethral aspiration was employed. This patient, communicated with during the past month, has remained well.

CASE 3.—The course of events, the treatment and the result in this case (A. R.) differed in no essential respect from case 1, excepting that the tear in the rectal wall was produced by packing gauze in between the rectum and the prostatic capsule, in order to control bleeding in this locality during closure of the incision. It might be added that extreme thinness of the anterior rectal wall at this point had been noted during the dissection. Since subsequent developments in this case and in case 1 were identical, there could be no purpose in repetition. The date of this operation was March 13, 1931. This patient is under observation and, at the present time, is entirely well.

SUMMARY

By means of continuous gentle aspiration of the urine (through both a suprapubic tube and a urethral catheter), together with free catharsis and careful nursing care, including frequent irrigations of the bladder and the perineal fistulous tract, it has been possible to bring about the spontaneous closure of three fresh urethrorectal fistulas.

Suprapubic urinary aspiration has been accomplished by means of an apparatus, new in principle, whereby siphon flow is indefinitely maintained by means of a simple mercury manometer, which automatically maintains the air pressure in the urine jug at a constant level.

At the time the treatment was instituted, each of these three patients had a functionless internal vesical sphincter, and each had gross fecal drainage through the suprapubic fistula, as well as urinary and fecal drainage through the perineum.

The spontaneous closure of urethrorectal fistula, under these circumstances, is contrary to generally accepted opinion.

The apparatus and method here described have been employed only in these three successful cases.

1436 Medical Arts Building.

Clinical Notes, Suggestions and New Instruments

URINARY RETENTION DUE TO THE USE OF EPHEDRINE

RAY M. BALYEAT, M.D.
AND
HERBERT J. RINKEL, M.D., OKLAHOMA CITY

In 1925 while clinically testing ephedrine sulphate for the most suitable dosage in the treatment of hay fever and asthma, one of us observed that a number of our patients who were taking large doses of ephedrine complained that they had little or no desire to pass urine and encountered some difficulty in relaxation of the sphincter ani. A study of the vegetative nervous supply to the bladder, vesical sphincter and trigon impressed us with the possibility that an extensive use of the drug might produce urinary retention. We at once reported these untoward clinical observations to the manufacturers of the drug and advised that they mention them in their literature.

In 1926, in a discussion of the physiologic action of ephedrine, we[1] attempted to explain the mechanism of the phenomenon described. In 1928, Boston[2] reported six cases of urinary retention, requiring catheterization, due entirely to the continuous use of ephedrine. In discussing these cases he stated: "Careful questioning of all patients herein cited failed to reveal any difficulty in the voiding of urine prior to the taking of ephedrine. I am unable to account for the symptom except it had to do with the oral administration of the preparations of ephedrine. I have no explanations whatever to offer for the actual mechanism of this phenomenon." No other reference concerning this untoward symptom due to ephedrine can be found in the literature.

The case reported here is similar to the cases that were reported by Boston[2] but we will offer more detailed explanation for the mechanism of the phenomenon.

REPORT OF CASE

G. W. S., a man, aged 58, came to us complaining of seasonal hay fever of twenty years' duration. We elicited a history of typical hay fever symptoms beginning about August 16 each year and continuing until a killing frost. His symptoms at the time of our examination had existed for about four weeks and were those typical of marked seasonal hay fever. At other times of the year he had no nasal or eye symptoms, except for an occasional cold. From a careful physical examination and detailed history we were able to find no evidence of any other pathologic condition. There were no symptoms relative to the urinary tract.

On testing for specific sensitization we found marked reactions to the pollen of ragweed and pigweed. There were also reactions to some of the animal epithelia and a few foods.

Coseason pollen therapy was instituted. As a means of giving temporary relief, we prescribed the local application of ephedrine in the nose, and advised the patient to take 25 mg. of ephedrine hydrochloride by mouth from four to six times daily. After

---

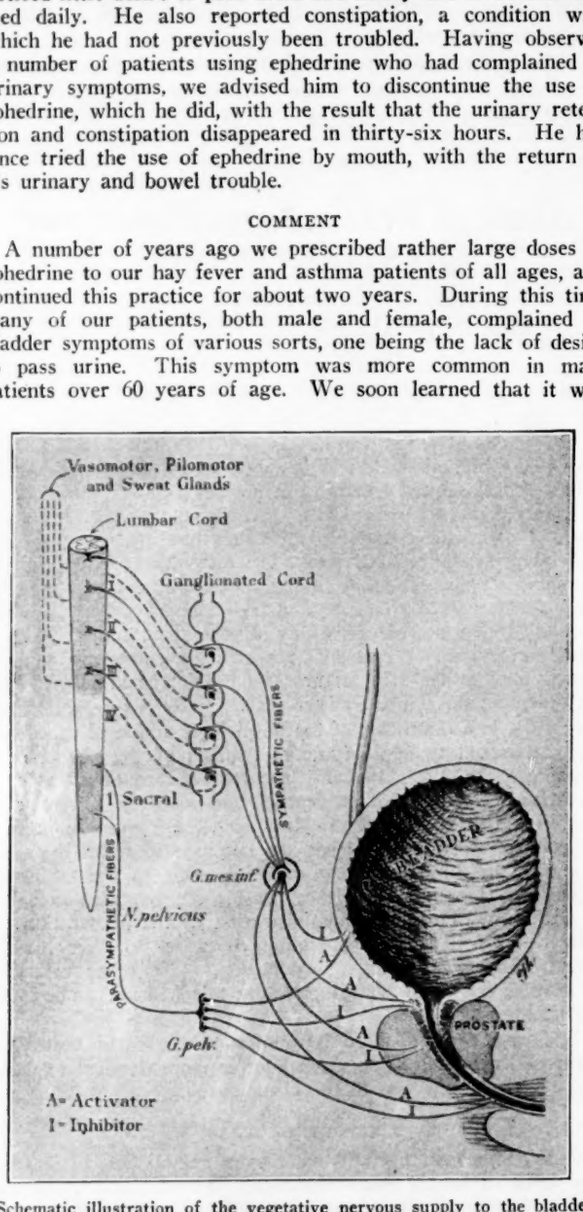
Read before the Staff and Clinical Society of the University Hospital, Feb. 5, 1932.
From the Allergy Section of the Medical Division of the University of Oklahoma Medical School, and the Balyeat Hay Fever and Asthma Clinic.

1. Balyeat, R. M.: Clinical Use of Ephedrine in the Treatment of Asthma and Hay Fever, J. Oklahoma M. A. **20**: 3 (Jan.) 1927.
2. Boston, L. N.: Dysuria Following Ephedrine Therapy, M. Times, New York **56**: 94 (April) 1928.

diagnosis he returned home. In about four weeks he again came to us with the history that he had been free from his hay fever but that about one week after reaching his home he noticed little desire to pass urine and finally had to be catheterized daily. He also reported constipation, a condition with which he had not previously been troubled. Having observed a number of patients using ephedrine who had complained of urinary symptoms, we advised him to discontinue the use of ephedrine, which he did, with the result that the urinary retention and constipation disappeared in thirty-six hours. He has since tried the use of ephedrine by mouth, with the return of his urinary and bowel trouble.

COMMENT

A number of years ago we prescribed rather large doses of ephedrine to our hay fever and asthma patients of all ages, and continued this practice for about two years. During this time many of our patients, both male and female, complained of bladder symptoms of various sorts, one being the lack of desire to pass urine. This symptom was more common in male patients over 60 years of age. We soon learned that it was necessary to explain to them the possible untoward action of the drug and advise them to pass urine at regular periods during the day even if there was no desire to do so, and to see that their bowels moved once daily.



Schematic illustration of the vegetative nervous supply to the bladder, trigon and vesical sphincter. The action of the sympathetic nerve is that of inhibition on the bladder muscle and activation on the muscle of the sphincter and trigon, and the action of the parasympathetic nerve is activation on the musculature of the bladder wall and inhibition on the sphincter muscle and trigon.

The use of ephedrine for the relief of asthma in patients past middle life proved somewhat disappointing, so we discontinued its extensive use in older patients. Since that time we have encountered bladder symptoms much less frequently.

Recently one of our asthmatic boys, aged 8 years, who takes ephedrine rather frequently for his attacks of asthma, complained that the morning following the use of ephedrine he had great difficulty in passing urine. We have observed a number of children who complained of some difficulty with bladder symptoms of various types, especially the one mentioned, when ephedrine is being used, who would be perfectly free from symptoms at other times.

Having seen a number of patients suffering with bladder symptoms due to the use of ephedrine, and realizing how extensively the drug is prescribed by the physician, and how much is taken by hay fever and asthma sufferers not prescribed by physicians, we conclude that there are many patients taking ephedrine who suffer with slight difficulty in passing urine or with urinary retention.

PHYSIOLOGIC ACTION OF EPHEDRINE ON THE BLADDER MUSCLES

After a careful search of the extensive literature concerning ephedrine, we find that no one has offered an explanation of the mechanism of the undesired bladder symptom described by us in 1926 and by Boston in 1928. According to Pottenger[3] and to Kuntz,[4] the action of the parasympathetic nerve on the musculature of the bladder wall is that of activation, while that of the sympathetic nerve fiber is that of inhibition. The enervation of the muscles of the bladder sphincter is just opposite to that of the muscles of the bladder wall. According to Chen,[5] the action of ephedrine is that of stimulation of the sympathetic fiber of the vegetative nervous system. The action of ephedrine, differing somewhat from the evanescent nature of epinephrine, is prolonged; therefore its continuous use in large doses would have a tendency to relax the bladder wall and contract the bladder sphincter, which clinically is found actually to happen, thereby causing the lack of desire to pass urine, or urinary retention.

In our study of the action of ephedrine on the musculature of the bladder and vesical sphincter, we have been impressed with the possibility of the use of large doses of ephedrine in the treatment of nocturnal enuresis.

Our use of ephedrine since 1926 has impressed us with the fact that the drug given in large quantities will not uncommonly produce various types of bladder symptoms, the chief one being the lack of desire to pass urine. The urologist and general practitioner should always consider ephedrine as a possible etiologic factor in cases in which complaint is made of a lack of desire to pass urine, or urinary retention.

OTOGENOUS TETANUS

J. M. BISHOP, M.D.; R. H. DUBOSE, M.D., AND FRED E. HAMLIN, M.D., ROANOKE, VA.

Otogenous tetanus has been reported rather frequently, but with one exception we have been unable to find a case reported, complicating an infection, not associated with an injury or a foreign body. The fact that practically all the reported cases are by foreign authors indicates that otogenous tetanus is extremely rare in America, or has been overlooked, or at least has not been reported. The following case of clinical generalized tetanus complicating a recurrent purulent otitis media with recovery of Bacillus tetani from the middle ear is presented as of interest, in diagnosis, that the middle ear may be the primary focus of a generalized tetanus, and an exact duplicate has not been found in the literature.

REPORT OF CASE

History.—A white girl, aged 3 years, was the third child in a family of four living children, one twin of the second pregnancy having died shortly after birth. The familial history was otherwise negative. The patient was delivered normally at full term; the birth weight was 8 pounds (3.6 Kg.). The first teeth erupted at 6 months. She walked at 1 year. She was breast fed for fifteen months. The left ear discharged for about ten days when the child was 8 months of age, and at intervals varying from three weeks to three months, accompanied by earache, fever at times, and discharge continuing from three days to two weeks; there was no marked odor to the discharge. There had been no other illness except an occasional mild "head cold." There had been no paracentesis of the tympanic membrane and no local treatment except occasional bland irrigations.

No history of injury was obtained. The left ear discharged for three or four days, late in January, 1931, and again on

3. Pottenger, F. M.: Symptoms of Visceral Disease, ed. 3, St. Louis, C. V. Mosby Company, 1925.
4. Kuntz, Albert: The Autonomic Nervous System, Philadelphia, Lea & Febiger, 1929.
5. Chen, K. K., and Schmidt, C. F.: Ephedrine and Related Substances, Medicine **9**, February, 1930.

March 16 and 17. April 8, some trouble in swallowing was noticed, which was more marked on the following day and accompanied by inability to open the mouth more than half an inch. The patient was seen by different physicians, April 9 and 12, and both attributed the condition to local disturbances of the throat or cervical region. The child continued to walk around until April 13, although there was increasing dysphagia and trismus. An anxious expression was noticed, April 12, and a mild tonic convulsion occurred on April 13 and continued at intervals, accompanied by sweats. There was very little change until April 17, although the convulsions became more severe and frequent. We saw the patient in the home on the afternoon of April 17, at which time she was transferred to the Roanoke Hospital.

Examination.—The patient was fairly well nourished and developed. She was conscious and had an anxious expression, apparently dreading to move or be disturbed. Slight ptosis of the left eyelid was noted. The pupils were small and they reacted to light. The right ear drum was normal; the left was dull and apparently thickened; the canal was dry. The cervical and masseter muscles were in constant spasm. The patient was unable to separate the teeth sufficiently to insert the tongue depressor. There was moderate rigidity of the neck. No opisthotonos was present. Inconstant coarse râles were heard throughout the chest. Generalized rigidity of the abdominal muscles occurred when the patient was disturbed. The muscles of the lower extremities were slightly spastic, especially when disturbed, and were more marked on the left. Kernig, Brudzinski and Gordon signs, clonus and the like were absent. The knee jerks were exaggerated and equal. There was no evidence of injury, scars or wounds.

Course and Treatment.—A typical generalized tetanic convulsion was precipitated by the injection of antitetanic serum soon after admission. The convulsions recurred frequently the following forty-eight hours, then gradually diminished. Lumbar puncture revealed a normal spinal fluid with normal pressure. Five thousand units of antitetanic serum was administered intraspinally, the remaining 50,000 units being administered intramuscularly over a period of ten days. Morphine sulphate and magnesium sulphate hypodermically were given when necessary, and two doses of sodium amytal were given intravenously to control the convulsions. The temperature remained elevated until the third day after admission, when the left ear drum ruptured spontaneously and discharged freely, after which the temperature remained around 100 to 101. A large incision was made in the ear drum. Six days after admission, the patient cried for food and ate ice cream, and on the ninth day could separate the teeth about half an inch. From this time, convalescence was uneventful, with discharge from the hospital, May 12. The left ear discharged after the patient left the hospital but cleared up under treatment and has remained well for three months.

Blood examination revealed a moderate secondary anemia and a slight polymorphonuclear leukocytosis (13,000, polymorphonuclears, 58 per cent). The blood Wassermann and Kahn reactions were negative. The urine was essentially normal. Roentgen examination did not show any evidence of mastoid involvement.

A direct smear from the middle ear, April 20, showed a mixed infection, cocci, and so on, and a large gram-positive bacillus, suggestive of B. tetani. A culture, taken from the middle ear, after five days' growth on dextrose brain broth under anaerobic conditions, showed bacilli with terminal spores. May 6, two guinea-pigs were inoculated with 1 cc. of the culture intramuscularly. The second guinea-pig at the same time was given 100 units of antitetanic serum. The unprotected pig died about sixteen hours after the injection; tetanus developed in the other the following day, and the animal died. May 7, two guinea-pigs were given 0.5 cc. of the culture intramuscularly; the second received, in addition, 375 units of antitetanic serum. The first contracted tetanus and died, and the second remained well except for a swelling at the point of injection.

Cultures of pus obtained from the left ear, April 24 and 26, were negative for B. tetani. The photomicrograph shows a smear of a subculture inoculated after heating of the original culture to from 75 to 80 C. for one hour.

COMMENT

A form of tetanus confined to the head and usually associated with paresis of the facial nerve was fully described by Rose in his monograph (1897), with report of a case. It is generally considered that the prognosis of tetanus is proportionally grave the nearer the primary focus approaches the brain. Therefore a comparatively mild tetanus, with insidious onset and with the primary focus in the middle ear, certainly requires some explanation. According to Petzal's [1] explanation, otogenous tetanus occurs in two forms: first, the acute, severe, generalized form, in which the exciting organisms are introduced into the ear by foreign bodies (injury). These cases are severe, show frequent involvement of the cranial nerves, and frequently terminate fatally. The second form results when the infection from the ear occurs in a case in which there is an existing suppuration, especially in chronic suppuration. The disease is modified in the latter form by local conditions in the middle ear, by the occurrence of a mixed infection already present, and by the previous local reaction. The question of a latent infection and the possibility of a low grade infection, not sufficient to cause symptoms yet resulting in a partial immunity, must be considered.

The question also arises regarding the possibility of the middle ear offering ideal conditions for the growth of B. tetani,

Smear of subculture in case of otogenous tetanus.

especially since absence of air is the chief requisite. Certainly a suppurating process of the middle ear could, by the resulting reaction, exclude entrance of air through the eustachian tube. (Tetanus bacilli remain and proliferate in the original wound. The tetanotoxin produced is taken up by the peripheral nerve filaments [2] and travels along the axis cylinders to the nerve centers, where it becomes fixed by the nerve cells. A portion of the toxin enters the circulation.) It appears obvious that under special local conditions the middle ear can serve as the primary focus in generalized tetanus.

Petzal's [1] case should be mentioned, since it is the only similar case reported that we have been able to find not associated with an injury or a foreign body: A man, aged 28, had a left radical mastoid operation seventeen years previously; the left ear and operative area had both discharged at intervals during this period. A slowly progressive paralysis of the left side of the face was first noticed. Trismus developed two weeks after the first symptoms. The question arose whether the symptoms were due to central involvement, or whether they were otogenous in origin. Under observation it was discovered that the trismus

1. Petzal, E.: Chronic Otogenous Head Tetanus (Rose's Form), Ztschr. f. Laryng., Rhin. **19**: 311-315 (May) 1930.
2. Tice, Frederick: Practice of Medicine, New York, W. F. Prior Company, Inc. **5**: 44, 1920.

occurred as tonic spasms and could be elicited by touch or by noise. Cultures from pus obtained from the left ear yielded B. tetani. The culture produced tetanus in mice. "Anatoxin" was used, with satisfactory results. The patient recovered.

Chalier and Rousset [3] report a fatal case of otogenous tetanus due to a small stone in the auditory canal, with unsuccessful attempts at removal.

Meseck [4] reports a similar case due to the presence of a cotton tampon wedged in the auditory canal. This was thought to have been inserted from two to three months previously during an attack of purulent otitis media. This patient recovered after a stormy illness.

That the diagnosis of otogenous tetanus may be difficult is evident. The case reported by Chalier and Rousset was admitted to the angina ward. Meningitis or facial paralysis of otogenous origin may be very confusing. Borries [5] states that facial symptoms are less common in auricular tetanus than in ocular tetanus. He concludes that tetanus should be kept in mind in the presence of any facial disorder of unknown origin, also in the absence of any visible traumatism.

511 Medical Arts Building.

POSTOPERATIVE EPIPLOITIS WITH ABSCESS

MAX THOREK, M.D., AND PHILIP THOREK, M.D., CHICAGO

Inflammatory changes and suppurative processes in the omentum, although not often reported in the literature, are probably fairly common lesions. They are likely to be overlooked as such and their symptoms attributed to some other cause. In a recent report, Vigyázó [1] states that he found less than 100 cases of inflammatory tumors of the omentum of all types in the literature. Such cases may or may not follow operations in the abdomen. In the first instance they usually result from extension of an inflammatory process from some contiguous organ or from the presence of a foreign body. The postoperative types have been attributed to ligatures harboring microorganisms or to ligation of inflamed omental tissue during a herniorrhaphy, appendectomy or other operation involving the omentum, especially if it is resected.

Walther [2] states that the omentum is found altered in patches in about 25 per cent of appendectomies. It is, however, with the type of omental suppuration which arises following an abdominal operation that we wish to deal.

Clinically, postoperative epiploitis may be classified under two types: (1) the so-called Schnitzler-Brown or chronic type, which may appear from a few weeks to a year after operation, and (2) the Kuettner-Schmieden or fulminating type, which is apparently of embolic or thrombotic origin and may simulate an appendicitis or other acute abdominal condition. Both types may occur either with or without adhesions to neighboring structures, but the adhesive type prevails.

In the more recent literature, Emerson [3] reports having seen three cases of hypertrophied and inflamed omentum following subumbilical celiotomy in excessively obese patients. In none of these cases had the omentum been resected. Arnold [4] reported two cases following operations in the pelvis and the abdomen. In neither case had the omentum been disturbed during operation, but in each case the patient had left the hospital not feeling quite well, and the symptoms of abscess appeared within a month or so from the time of discharge.

It is probable that many cases in which patients continue to complain after an appendectomy, cholecystectomy or similar operation are cases of more or less chronic omental inflammation or suppuration, especially when the organ is inflamed or, as in the case of a herniotomy, when it is found expedient to resect it.

Walther [2] cites Haller,[5] who reports that of 372 patients operated on by resection for epiploitis during a period of ten years, 208 were reviewed. Of these, 175 (84 per cent) were in perfect condition and 33 were improved. Prutz [6] reviews nine omental resections for postoperative inflammatory tumors, with three deaths.

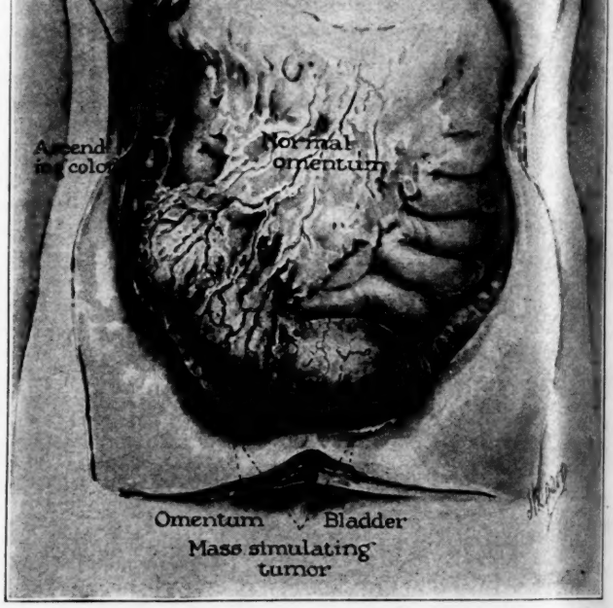
The following unusual case of epiploitis followed herniotomy with omental resection:

REPORT OF CASE

A man, aged 44, white, a dementia praecox subject, entered the hospital, April 30, 1931, with the diagnosis of right inguinal hernia.

His family history was negative. The patient, an inmate of a state institution for the treatment of dementia praecox, had an operation some years ago, in all probability for hydrocele of the cord.

The patient's physical condition was generally good. No pathologic lesion of any importance was noted except a protrusion in the right inguinal region, which the patient stated



Epiploitis: Condition found at operation.

had been present for the past twelve years. It did not usually cause him any discomfort, except on physical exertion or coughing, when he experienced much pain. Examination of the blood and urine disclosed nothing abnormal.

An oblique incision was made parallel to Poupart's ligament and the right inguinal region was exposed. A modified Bassini operation was done. The opened sac disclosed the presence of a large portion of the great omentum, of firm consistency, considerably indurated and containing many tortuous vessels; a portion of this, about the size of the palm of the hand, was resected. The omental stump was cared for by exact hemostasis and returned to the abdominal cavity. Following the operation, the patient was returned to bed in good condition. He was discharged from the hospital after fifteen days, with the operative wound satisfactorily cicatrized.

Two months later, the patient was readmitted to the hospital with the following history: He stated that he had been kicked in the abdomen two weeks after his discharge from our care. A lump developed at the site of this injury on the right side between the umbilicus and the symphysis; it increased in size, and about two weeks before he noticed a discharge of blood mixed with slime from this "lump" and also from the rectum.

3. Chalier, J., and Rousset, J.: Tetanus from Foreign Body in the Ear, Lyon méd. **141**: 675-678 (June 10) 1928.
4. Meseck, Hildegard: Severe Tetanus of an Otic Origin, Cured, Klin. Wchnschr. **5**: 2265-2266 (Nov. 26) 1926.
5. Borries, G. V. T.: Auricular Tetanus and Its Relation to Ocular Tetanus, Ugesk. f. Læger **90**: 900-903 (Sept. 13) 1928.
1. Vigyázó, G.: Zur Frage der Pathogenese der sogenannten entzündlichen Omentum-Tumoren, Gyógyászat **66**: 897, 1926.
2. Walther, C.: Epiploites chroniques, J. de méd. et chir. prat. **98**: 166 (March 10) 1927.
3. Emerson, Clarence: Omentitis Hypertrophica — A New Clinical Entity, Nebraska M. J. **14**: 29 (Jan.) 1929.
4. Arnold, H. R.: Postoperative Abscess Formation in the Omentum, West. J. Surg. **38**: 520 (Sept.) 1930.
5. Haller: Paris thesis, 1912.
6. Prutz, W.: Deutsche Chirurgie, Stuttgart, Enke **46**: 245, 1913.

It was found that he had been taken to another hospital, where the abdomen was explored and, following a biopsy, a diagnosis was made of probable malignant disease of the abdominal wall and abdominal cavity, and removal of the tumor was advised. No report on the observations of this exploration and biopsy could be obtained.

Physical examination of the patient at this time showed that the scar from the inguinal hernia operation had completely healed. A fresh longitudinal incision was found about 5 inches long, beginning about 1 inch above the umbilicus and terminating above the inguinal scar. The tissues surrounding this open wound were indurated, and a palpable mass, about the size of a man's fist, was found. Rectal palpation induced tenesmus with pain on pressure toward the right side. Otherwise the physical examination was negative, and the patient's general condition was good; there was slight fever (from 99 to 100 F.); the pulse rate was around 100 a minute.

Examination of the blood disclosed a coagulation time of two and one-half minutes; hemoglobin, 85 per cent; erythrocytes, 4,470,000; leukocytes, 18,900; lymphocytes, 29 per cent; polymorphonuclear neutrophils, 70 per cent; basophils, 1 per cent.

The urine showed a few granular casts and an occasional hyaline cast with a trace of albumin, a few epithelial cells and from 25 to 30 pus cells per high-power field.

The Wassermann reaction of both the blood and the spinal fluid was negative.

The patient was kept under observation for a few days and it was then decided to undertake an exploratory operation.

When the abdomen was opened, a large mass was discovered engulfing the cecum, ascending colon and urinary bladder. This mass bore the semblance of a malignant tumor, as shown in the accompanying illustration. It was found to be directly connected with the omentum, but there was a sharp line of demarcation between the normal omentum and the pathologic mass. The tumor was firm throughout, except at the middle portion, where some fluctuation was noted. The lymph glands in the vicinity were not involved, so far as could be observed.

The mass was intimately associated with the bladder wall and with the ascending colon and the cecum, and its removal with that of parts of the involved organs, which appeared to be indicated since we believed the tumor to be malignant, seemed a formidable procedure. However, in examining the bowel, we found a line of cleavage between the tumor mass and the cecum. Further investigation along this line of cleavage disclosed that, while the pathologic mass was rather intimately attached to the serosa of the bowel, it did not penetrate it. It was found possible to separate the mass bluntly from the large bowel, from the right side of the small pelvis and from the bladder, to free it completely, in fact, and leave it suspended from the normal omentum. It was then delivered into the wound and ablated from the healthy omentum. Inspection of the field showed that the greater part of the omentum was involved in the pathologic process.

A careful surgical toilet of the area of operation was made and the wound closed. The postoperative course was stormy for about forty-eight hours, following which convalescence was uneventful.

The removed mass was opened and disclosed an abscess, the size of an orange, surrounded by inflamed and thickened omentum.

Microscopic examination confirmed the finding of omental abscess, which developed at the site of the first resection made during the herniorrhaphy. The inflammatory process had extended from the primary focus in the omental stump in the direction indicated. While the gross appearance at first suggested a malignant growth, the microscopic study failed to reveal any trace of cancerous transformation of the structures composing the tumor mass.

CONCLUSIONS

It is wise, in every abdominal operation, to examine the omentum carefully for signs of epiploitis.

If such a condition is found and resection done, drainage as a prophylactic measure seems to be indicated.

Persistence of symptoms suggestive of an inflammatory process in the abdomen after an abdominal operation should arouse the suspicion of the existence of epiploitis.

In our case, trauma to the abdominal wall following an operation for hernia and exploratory operation and biopsy with a diagnosis of possible malignancy obscured the real nature of the condition.

850 Irving Park Boulevard.

DIABETES MELLITUS APPEARING IN A CHILD WITHIN ONE MONTH AFTER RECOVERY FROM ACUTE POLIOMYELITIS

E. R. BLAISDELL, M.D., PORTLAND, ME.

M. R., a girl, aged 9 years, was admitted to the Maine General Hospital, Oct. 4, 1931, in the pediatric service of Dr. Thomas Foster. The family and the past history were unimportant. The present illness began thirty-six hours before, when she awoke in the morning with frontal headache. Late that afternoon she vomited. At this time she was seen by the family physician, who found a temperature of 102 F. On the following morning the temperature was 100 F., and there was slight stiffness of the muscles of the neck and back. At the time of entrance to the hospital, the rigidity of the muscles of the neck had increased and she was unable to flex the chin on the chest. The knee jerks were hyperactive and Babinski's sign was present on both sides. The spinal fluid gave a cell count of 60 per cubic millimeter and reduced Benedict's solution. Twenty centimeters of poliomyelitis convalescent serum was given intravenously. One hour later the patient had a severe chill, which lasted fifteen minutes. Convalescence was rapid, however, and she was discharged, October 11, feeling well and with no evidence of paralysis. Examination of the urine was negative on both admission and discharge.

The child was readmitted, November 14, semiconscious, in the medical service. During the previous week, the mother noticed that the child was drinking large quantities of water and voiding much more urine than usual. Five days later, the family physician was consulted and a heavy trace of sugar was found in the urine. Special dietetic treatment was advised, but in spite of this the patient soon became drowsy and the physician sent her to the hospital. On arrival, the urine showed 5 per cent sugar and a heavy trace of diacetic acid and acetone. The blood sugar was 290 mg. per hundred cubic centimeters of whole blood. During the next twelve hours, fluids were forced, including 600 Gm. of orange juice, and 80 units of insulin were given, both in divided doses. On the following day she felt much better and was able to eat solid food. The diet-insulin balancing was uneventful and on discharge, November 25, she was eating 50 Gm. of protein, 42 Gm. of fat and 80 Gm. of carbohydrate and she required 27 units of insulin daily. The urine had been normal for four days. There was no evidence of paralysis from the recent poliomyelitis infection.

COMMENT

Infection has long been recognized as one of the etiologic factors in diabetes mellitus, yet it is usually difficult to trace the disease to any definite previous infection as in many cases years may elapse between the time of infection and the appearance of the disease. Allen[1] believes that a certain number of cases do arise directly in connection with infection, especially in the young. White,[2] after studying 100 diabetic children in Joslin's clinic writes: "Sixty per cent were without infection in the year preceding the onset and in the remainder the association appears individual rather than casual." Geyelin,[3] in 1923, had only seen eight cases in which the disease had originated within five weeks of the beginning of the infection.

Although the acute poliomyelitis infection, in this patient, cannot be held directly responsible for the diabetes mellitus, it is unusual for the latter to develop so soon after an acute infection and, as far as I know, there have been no cases reported of diabetes mellitus developing within a few weeks following recovery from acute poliomyelitis.

12 Deering Street.

This case was presented before the Maine General Hospital Clinic at the November, 1931, meeting of the Cumberland County Medical Society, Portland, Me.

1. Allen, F. M.: Lecture, Physiatric Institute, 1925.
2. White, Priscilla: The Potential Diabetic Child, J. A. M. A. **88**: 170 (Jan. 15) 1927.
3. Geyelin: Annual Meeting of Connecticut Medical Society, New Haven, Conn., 1923.

Special Article

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES IN 1931

TWENTIETH ANNUAL REPORT

This report concerns the same ninety-three cities with a population of more than 100,000 that appeared in the corresponding report for 1930. The number of deaths from typhoid during 1931 in each city (except Scranton; see note to table 2) has been supplied by the respective health department. The rates are calculated on the basis of the population figures for July 1, 1931, as estimated by the U. S. Bureau of the Census, except in the few instances (noted in the tables) in which such estimates were not made; in the latter, the population figures of the 1930 federal census were employed. It should be noted that the figures for deaths from typhoid include all that have occurred within the city limits, of nonresidents as well as residents, since statisticians are agreed that "the attempt to eliminate the deaths of nonresidents would often result in an understatement of the true mortality." [1] It is evident, however, that nonresident deaths offer an important problem in a number of localities. The cities in which one third or more of the typhoid deaths occurred in nonresidents are indicated in table 9.

The fairest way of dealing with the general problem of nonresident deaths would of course be to charge against the community only those deaths in which it could be shown that the disease or cause of death originated within the corporate limits. To these might properly be added those deaths of nonresidents in which similar relations could be proved. Any uniform and "fair" distribution of nonresident deaths is obviously difficult and in most cases impracticable. In a recent discussion of this problem in the Weekly Bulletin of the New York Department of Health (Nov. 1, 1930) it is pointed out that many nonresidents suffering from cancer come to New York City for the sake of superior surgical and other facilities. The figures for 1929 show 169 New York citizens dying of cancer outside the city and 363 nonresidents dying of the disease in the city. In tuberculosis the situation, as one might suppose, is reversed, 465 New York city residents dying of the disease in places outside the city, while 92 nonresidents died of tuberculosis in the city. The deaths of nonresidents from automobile accidents afford another illustration.

It is evident that in most cities in this country any attempt to correct general mortality tables by analyzing nonresident deaths would hardly be worth while. For certain specific diseases like typhoid, however, particularly in the smaller cities and in those communities where the disease is relatively infrequent, it is plain that the problem of nonresident deaths must be kept in mind in any comparative study. In five American cities, all the typhoid deaths reported in 1930 were stated to be those of nonresidents. In a number of others, one third or more of the reported typhoid deaths were stated to be of nonresidents. As pointed out in the previous report, city typhoid rates in some parts of the United States at the present time are indicative of regional, rather than strictly municipal, conditions.

Five of the fourteen New England cities (Cambridge, Fall River, Lynn, Somerville, Waterbury) had no deaths from typhoid during 1931 (table 1). Boston apparently equals its good record of 1930 with a rate of less than 1 per hundred thousand. Lowell, which has not had an enviable typhoid picture in recent years, reports a much lower figure for 1931. Springfield, which was the banner city for the period 1926-1930, did not do as well in 1931, and Hartford shows an average typhoid rate for 1930 and 1931 considerably higher than the average for the preceding ten years.

TABLE 1.—*Death Rates of Cities in New England States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Cambridge	0.0	0.9	2.1	4.3	2.5	4.0	9.8
Fall River	0.0	2.6	2.2	2.3	8.5	13.4	13.5
Lynn	0.0	1.0	1.5	1.6	3.9	7.2	14.1
Somerville	0.0	1.9	1.3	1.6	2.8	7.9	12.1
Waterbury	0.0	1.0	1.2	1.0	8.0	18.8	....
Worcester	0.5	0.0	1.0	2.3	3.5	5.0	11.8
Bridgeport	0.7	0.0	0.5	2.2	4.8	5.0	10.3
Boston	0.9	0.8	1.2	2.2	2.5	9.0	16.0
Lowell	1.0*	5.0	2.6	2.4	5.2	10.2	13.9
New Haven	1.2	0.0	0.6	4.4	6.8	18.2	30.8
Providence	1.6	2.0	1.3	1.8	3.8	8.7	21.5
New Bedford	1.8*	2.7	1.5	1.7	6.0	15.0	16.1
Springfield	2.6	0.7	0.4	2.0	4.4	17.6	19.9
Hartford	3.6	2.4	1.3	2.5	6.0	15.0	19.0

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1931, was made by the Census Bureau.

The typhoid rate for the New England group as a whole is, with one exception (1928), the lowest ever recorded (table 12). These cities have improved their condition relatively with respect to the Middle Atlantic group, the rates this year being almost identical in the two sections.

TABLE 2.—*Death Rates of Cities in Middle Atlantic States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Reading	0.0	0.9	1.6	6.0	10.0	31.9	42.0
Utica	0.0	0.0	1.1	3.9*	....	....	....
Newark	0.2	0.2	0.9	2.3	3.3	6.8	14.6
Jersey City	0.3	0.3	0.9	2.7	4.5	7.2	12.6
Syracuse	0.5	0.5	0.8	2.3	7.7	12.3	15.6
Buffalo	0.7	3.9	2.7	3.9	8.1	15.4	22.8
Erie	0.8	0.9	0.9	2.3	6.9	49.0	46.6
Philadelphia	0.9	0.9	1.1	2.2	4.9	11.2	41.7
Rochester	0.9	1.8	1.7	2.1	2.9	9.6	12.8
New York	1.1	0.9	1.3	2.6	3.2	8.0	13.5
Pittsburgh	1.2	1.5	2.4	3.9	7.7	15.9	65.0
Yonkers	1.4	0.7	0.5	1.7	4.8	5.0	10.3
Trenton	1.6	2.4	2.1	8.2	8.6	22.3	28.1
Scranton	2.1†	1.4	1.8	2.4	3.8	9.3	31.5
Albany	2.3	0.8	1.8	5.6	8.0	18.6	17.4
Paterson	2.9	0.0	1.0	3.3	4.1	9.1	19.3
Camden	4.2	4.2	4.4	5.9	4.9	4.5	4.0
Elizabeth	4.3	4.4	1.6	2.4	3.3	8.0	16.6

* Data for 1925 only.
† Typhoid deaths for Scranton furnished by Pennsylvania Department of Health, Harrisburg.

The cities in the Middle Atlantic states, by far the most populous of the eight geographic groups, had an average rate in 1931 almost exactly like that in 1930 (table 2). Reading and Utica had no typhoid deaths in 1931, the latter repeating its perfect record for the second successive year. Paterson on the other hand, which had no typhoid deaths in 1930, records a rate of 2.9 in 1931. Newark, Jersey City, Syracuse, Phila-

The preceding articles were published in THE JOURNAL, May 31, 1913, p. 1702; May 9, 1914, p. 1473; April 17, 1915, p. 1322; April 22, 1916, p. 1305; March 17, 1917, p. 845; March 16, 1918, p. 777; April 5, 1919, p. 997; March 6, 1920; p. 672; March 26, 1921, p. 860; March 25, 1922, p. 890; March 10, 1923, p. 691; Feb. 2, 1924, p. 389; March 14, 1925, p. 813; March 27, 1926, p. 948; April 9, 1927, p. 1148; May 19, 1928, p. 1624; May 18, 1929, p. 1674; May 17, 1930, p. 1574, and May 9, 1931, p. 1576.

1. Bureau of the Census, Mortality Statistics, 1912, p. 13.

delphia and Camden had the same rates for 1931 as for 1930, and Erie, New York and Elizabeth had rates substantially the same for the two years. Buffalo shows an encouraging decrease from 3.9 to 0.7. Camden and Elizabeth again bring up the bottom of the list as they did in 1930. The increase in New York, small, to be sure, but worth noting, seems to be chiefly due to three outbreaks during the second quarter of 1931 caused by unregistered carriers. The skill and thoroughness with which these outbreaks were traced to food handlers are worthy of emulation. More than half of the typhoid cases occurring in New York, in which the probable mode of infection could be traced, were apparently contracted outside the city.

TABLE 3.—*Death Rates of Cities in South Atlantic States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Richmond	1.6	2.2	1.9	5.7	9.7	15.7	34.0
Miami	1.8	1.8	3.5	...	...	....	....
Wilmington	1.9*	4.7	3.1	4.7	25.8†	23.2‡	33.0
Jacksonville	3.0	0.0	4.4	...	....	....	....
Baltimore	3.1	3.3	3.2	4.0	11.8	23.7	35.1
Tampa	3.8	3.0	3.8	19.1	43.9§	....	....
Washington	3.9	3.3	2.8	5.4	9.5	17.2	36.7
Norfolk	5.4*	3.8	2.2	2.8	8.8	21.7	42.1
Atlanta	12.6	10.3	11.1	14.5	14.2	31.4	58.4

* Rate computed from population as of April 1, 1930, as no estimate for July 1, 1931, was made by the Census Bureau.
† Data for 1916 only.
‡ Lacks data for 1913.
§ Lacks data for 1916.

Five of the nine cities in the South Atlantic group had higher rates in 1931 than in 1930 and one (Miami) was stationary (table 3). Norfolk again shows an increase and bids fair to have a higher average for the 1930 quinquennium than for the preceding ten years. Washington also is not quite maintaining its excellent 1926-1930 average.

The cities in the East North Central group (tables 4 and 12) lead all the others in their low typhoid

TABLE 4.—*Death Rates of Cities in East North Central States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Flint	0.0	0.6	1.6	4.6	22.7	18.8	46.9
South Bend	0.0	0.0	...	...	....	....	....
Milwaukee	0.3	0.3	0.8	1.6	6.5	13.6	27.0
Chicago	0.4	0.6	0.6	1.4	2.4	8.2	15.8
Cincinnati	0.4	2.4	2.5	3.2	3.4	7.8	30.1
Dayton	0.4	0.5	1.9	3.3	9.3	14.8	22.5
Detroit	0.7	1.1	1.3	4.1	8.1	15.4	22.8
Evansville	0.9	6.8	6.2	5.0	17.5	32.0	35.0
Grand Rapids	1.2	0.6	1.0	1.9	9.1	25.5	29.7
Akron	1.5	1.2	1.5	2.4	10.6	21.0	27.7*
Indianapolis	1.6	1.9	2.7	4.6	10.3	20.5	30.4
Fort Wayne	1.7	2.6	4.2	12.9	7.3	....	....
Youngstown	1.7	2.3	1.1	7.2	19.2	29.5	35.1
Peoria	1.8	0.0	0.2	3.7	5.7	16.4	15.7†
Canton	1.9	1.9	1.4	3.3	8.9	....	....
Toledo	2.0	2.1	3.0	5.8	10.6	31.4	37.5
Columbus	2.4	2.7	2.1	3.5	7.1	15.8	40.0
Cleveland	3.4	1.5	1.0	2.0	4.0	10.0	15.7

* Data for 1909 and 1910 only.
† Lacks data for 1907, 1908 and first four months of 1909.

average for 1931. This is in spite of the fact that in Cleveland twenty out of thirty-one deaths occurred in an outbreak at the State Hospital for the Insane. Without these deaths, the Cleveland rate would be 1.2 instead of 3.4, as given in table 4. The rates in Milwaukee, Chicago and Cincinnati continue amazingly low. South Bend, which was first reported among the cities with a population of over 100,000 in 1930, ends its second consecutive year without a death. Detroit seems definitely to have come out of its typhoid period and ranks among the best. This great group of Middle Western cities with nearly 10,000,000 population appears headed toward an almost complete elimination of typhoid.

The cities in the East South Central states have, as is well known, a more difficult problem than those in some other parts of the country. The great reduction

TABLE 5.—*Death Rates of Cities in East South Central States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Chattanooga	1.6	0.8	8.0	18.6	27.2	35.8*	....
Louisville	2.6	1.6	3.7	4.9	9.7	19.7	52.7
Birmingham	3.0	4.6	8.0	10.8	31.5	41.3	41.7
Nashville	3.2	12.3	18.2	17.8	20.7	40.2	61.2
Knoxville	7.3	1.9	10.7	20.8	25.3†	....	....
Memphis	7.3	4.7	9.3	18.9	27.7	42.5	35.3

* Data for 1914 and 1915 only.
† Data for 1920 only.

in the Nashville rate for 1931 is especially noteworthy (table 5). This is by far the lowest rate ever reported in that city. Birmingham also breaks its lowest previous record. Memphis, on the other hand, shows an increase and Knoxville is also a backslider.

The cities in the West North Central states make their best group record (table 6), Des Moines and

TABLE 6.—*Death Rates of Cities in West North Central States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Des Moines	0.0	1.4	2.4	2.2	6.4	15.9	23.7
Wichita	0.0	1.8	1.2	6.3	...	....	....
Minneapolis	0.6	1.3	0.8	1.9	5.0	10.6	32.1
Duluth	1.0	2.0	1.1	1.7	4.4	19.8	45.5
St. Paul	1.1	0.7	1.4	3.4	3.1	9.2	12.8
Kansas City, Mo.	1.5	2.2	2.8	5.7	10.6	16.2	35.6
Kansas City, Kan.	1.6	0.0	1.7	5.0	9.4	31.1	74.5*
Omaha	1.8	0.9	1.3	3.3	5.7	14.9	40.7
St. Louis	2.0	2.5	2.1	3.9	6.5	12.1	14.7

* Lacks data for 1906 and 1907.

Wichita getting a place on the honor roll, while Minneapolis, Duluth and St. Paul are not far behind. St. Louis continues its excellent record.

The cities in the West South Central states are, as heretofore, relatively high in typhoid as compared with those in other parts of the country (table 7), the

TABLE 7.—*Death Rates of Cities in West South Central States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Tulsa	2.0	2.1	8.3	16.2*	....	....	....
Houston	3.2	3.8	4.8	7.6	14.2	38.1	49.5†
San Antonio	4.2	3.9	4.6	9.3	23.3	29.5	35.9
El Paso	4.8	6.8	9.1	10.8	30.7	42.8	....
Fort Worth	5.4	4.9	5.9	6.1	16.3‡	11.9	27.8
Oklahoma City	5.6	7.0	7.4§	...	....	....	....
Dallas	7.3	6.5	7.3	11.2	17.2	....	....
New Orleans	13.9	6.5	9.9	11.6	17.5	20.9	35.6

* Lacks data for 1921 and 1922.
† Data for 1910 only.
‡ Lacks data for 1918 and 1919.
§ Lacks data for 1926.

average for the group in 1931 being about seven times as high as the averages for the cities in the New England, Middle Atlantic, East North Central and Mountain and Pacific groups. The increased rate in 1931 appears to be due largely to the increase in the

New Orleans rate. This city, however, is apparently one of those suffering from a high nonresident rate, forty-eight of the sixty-five typhoid deaths in 1931 being reported as among nonresidents. Dallas again seems to have more of a typhoid problem than Houston, San Antonio or Fort Worth. The El Paso rate seems to be coming down satisfactorily.

The cities in the Mountain and Pacific states (table 8) make a particularly good record in 1931, nearly all of them showing rates as good as or better than those for 1930, thus bringing the group as a whole into close competition with the Eastern states. Denver, however, is out of line and had a higher rate in 1931 than its 1926-1930 average.

TABLE 8.—*Death Rates of Cities in Mountain and Pacific States from Typhoid per Hundred Thousand Population*

	1931	1930	1926–1930	1921–1925	1916–1920	1911–1915	1906–1910
Long Beach	0.0	0.7	1.1	2.1*	...	...	....
Seattle	0.5	2.2	2.2	2.6	2.9	5.7	25.2
San Diego	0.6	0.0	1.0	1.6	7.9	17.0	10.8
Los Angeles	0.7	1.5	1.5	3.0	3.6	10.7	19.0
Spokane	0.8	1.7	2.2	4.4	4.9	17.1	50.3
Tacoma	0.9	0.9	1.8	3.7	2.9	10.4	19.0
Oakland	1.0	1.0	1.2	2.0	3.8	8.7	21.5
Portland	1.0	1.0	2.3	3.5	4.5	10.8	23.2
Salt Lake City	1.4	2.8	1.9	6.0	9.3	13.2	41.1
San Francisco	1.4	1.3	2.0	2.8	4.6	13.6	26.3
Denver	3.4	2.1	2.6	5.1	5.8	12.0	37.5

* Lacks data for 1921.

TABLE 9.—*Death Rates from Typhoid in 1931*

Honor Roll: No Typhoid Deaths

Cambridge	Long Beach	South Bend
Des Moines	Lynn	Utica
Fall River	Reading	Waterbury
Flint	Somerville	Wichita

First Rank (from 0.1 to 1.9 Deaths per Hundred Thousand)

Newark 0.2	Boston 0.9	Akron 1.5
Jersey City 0.3*	Evansville 0.9	Kansas City, Mo. 1.5†
Milwaukee 0.3	Philadelphia 0.9	Chattanooga 1.6
Chicago 0.4	Rochester 0.9*	Indianapolis 1.6
Cincinnati 0.4	Tacoma 0.9	Kansas City, Kan. 1.6*
Dayton 0.4	Duluth 1.0	Providence 1.6†
Seattle 0.5	Lowell 1.0	Richmond 1.6†
Syracuse 0.5	Oakland 1.0†	Trenton 1.6†
Worcester 0.5	Portland 1.0	Fort Wayne 1.7
Minneapolis 0.6†	New York 1.1	Youngstown 1.7†
San Diego 0.6*	St. Paul 1.1	Miami 1.8
Bridgeport 0.7	Grand Rapids 1.2†	New Bedford 1.8
Buffalo 0.7†	New Haven 1.2†	Omaha 1.8
Detroit 0.7	Pittsburgh 1.2†	Peoria 1.8†
Los Angeles 0.7	Salt Lake City 1.4	Canton 1.9
Erie 0.8	San Francisco 1.4†	Wilmington 1.9
Spokane 0.8*	Yonkers 1.4	

Second Rank (from 2.0 to 4.9)

St. Louis 2.0	Paterson 2.9	Hartford 3.6†
Toledo 2.0	Birmingham 3.0†	Tampa 3.8
Tulsa 2.0	Jacksonville 3.0	Washington 3.9
Scranton 2.1	Baltimore 3.1	Camden 4.2†
Albany 2.3	Houston 3.2	San Antonio 4.2†
Columbus 2.4†	Nashville 3.2	Elizabeth 4.3
Louisville 2.6	Cleveland 3.4	El Paso 4.8
Springfield 2.6	Denver 3.4	

Third Rank (from 5.0 to 9.9)

Fort Worth 5.4	Oklahoma City 5.6	Knoxville 7.3
Norfolk 5.4	Dallas 7.3†	Memphis 7.3†

Fourth Rank (10.0 and Over)

Atlanta 12.6†	New Orleans 13.9†

* All the typhoid deaths reported were stated to be in nonresidents.
† One third or more of the reported typhoid deaths were stated to be in nonresidents.

Twelve of the ninety-three cities state that no typhoid deaths occurred within their limits in 1931 (table 9). This is the largest number of cities with perfectly clear records ever reported in these summaries.

The total typhoid rate for the seventy-eight cities whose records are available for the whole twenty-one year period is almost exactly the same as for the two preceding years. It is too soon to conclude that a stable period in the urban typhoid rate has been reached for the whole country. In the light of past experience, it seems probable that a further decline will be witnessed. Tables 10 and 11 bear eloquent testimony to the astonishing improvement in typhoid prevalence that has taken place.

TABLE 10.—*Number of Cities with Various Typhoid Death Rates*

	No. of Cities	10.0 and Over	5.0 to 9.9	2.0 to 4.9	1.0 to 1.9	0.1 to 0.9	0.0
1906–1910	77	75	2	0	0	0	0
1911–1915	79	58	19	2	0	0	0
1916–1920	84	22	32	30	0	0	0
1921–1925	89	12	17	48	12	0	0
1926–1930	92	3	10	30	37	12	0
1926	91	9	13	28	20	15	6
1927	92	6	10	28	27	13	8
1928	92	5	9	29	22	17	10
1929	92	2	9	21	27	25	8
1930	93	2	6	30	23	22	10
1931	93	2	6	23	28	22	12

TABLE 11.—*Total Typhoid Rate for Seventy-Eight Cities, 1910-1931* *

	Population	Typhoid Deaths	Typhoid Death Rate per 100,000
1910	22,573,435	4,637	20.54
1911	23,211,341	3,950	17.02
1912	23,835,399	3,132	13.14
1913	24,457,989	3,285	13.43
1914	25,091,112	2,781	11.08
1915	25,713,346	2,434	9.47
1916	26,257,550	2,191	8.34
1917	26,865,408	2,016	7.50
1918	27,086,696†	1,824†	6.73
1919	27,735,083†	1,151†	4.15
1920	28,244,878	1,088	3.85
1921	28,859,062	1,141	3.95
1922	29,473,246	963	3.26
1923	30,087,430	950	3.16
1924	30,701,614	943	3.07
1925	31,315,598	1,079	3.44
1926	31,929,782	907	2.84
1927	32,543,966	648	1.99
1928	33,158,150	628	1.89
1929	33,772,334	537	1.59
1930	34,386,717	554	1.61
1931‡	35,137,915	563	1.60

* The following fifteen cities are omitted from this table because data for the full period are not available: Canton, Chattanooga, Dallas, Fort Wayne, Jacksonville, Knoxville, Long Beach, Miami, Oklahoma City, South Bend, Tampa, Tulsa, Utica, Wichita, Wilmington.
† Data for Fort Worth lacking.
‡ The rate for the ninety-three cities in 1931 is 1.68 (total population, 37,145,012; typhoid deaths, 623), whereas in 1930 the corresponding rate was 1.64.

TABLE 12.—*Total Typhoid Death Rate per Hundred Thousand Population for Ninety-Three Cities According to Geographic Divisions*

	1931 Population	1931 Typhoid Deaths	Typhoid Death Rates 1931	1930	1926–1930	1925
New England	2,617,705	28	1.07	1.23	1.31	2.48
Middle Atlantic	12,866,100	137	1.06	1.03	1.40	2.97
South Atlantic	2,352,107	101	4.29	3.87	4.50	7.01*
East North Central	9,585,300	96	1.00	1.14	1.29†	2.32†
East South Central	1,223,300	50	4.09	4.25	8.31	13.00
West North Central	2,688,600	36	1.34	1.74	1.83	3.43
West South Central	1,905,700	133	6.97	5.34	7.32‡	13.08§
Mountain and Pacific	3,906,200	42	1.07	1.43	1.80	2.33

* Lacks data for Jacksonville and Miami.
† Data for South Bend for 1925-1929 are not available.
‡ Lacks data for Oklahoma City in 1926.
§ Lacks data for Oklahoma City.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS AUTHORIZED PUBLICATION OF THE FOLLOWING ARTICLE.

H. A. CARTER, Secretary.

ULTRAVIOLET THERAPY IN DERMATOLOGY

GEORGE M. MacKEE, M.D.
NEW YORK

The physical, biological and chemical properties of ultraviolet radiation have been described in these columns; also the therapeutic effect of such radiation on systemic diseases. In this article the discussion is limited to the effect of ultraviolet radiation on skin diseases.

With few exceptions the evaluation of ultraviolet radiation on the various dermatoses is based on an uncertain foundation—clinical observation, impressions, lack of controls, lack of standard dosage, and the use of heterogeneous radiation. Just how the radiation acts on the dermatoses is not well understood. In some instances, efficacy appears to depend on the active hyperemia produced. In other instances the result may depend on a systemic effect produced by absorption by the blood, or by the cells of the epidermis. In all probability the bacteriologic effect of the easily absorbed shorter wavelengths is negligible. The possible influence of the more penetrating visible light rays and infra-red rays has not been carefully studied in their therapeutic relation to the near and far ultraviolet rays.

APPARATUS

Heliotherapy.—As a rule, at least in dermatology, sun bathing is done outdoors and no paraphernalia are necessary other than those required for the comfort of the patient (blankets, clothing, chairs, couches, water) and for privacy (screens, and the like). Sun bathing through ordinary window glass is not used for the treatment of skin diseases. Special glass which allows the passage of a large amount of ultraviolet radiation is used to some extent. Glass filters of various colors, permitting passage of various portions of the visible spectrum—blue, orange and so on—have been used in the past but are seldom if ever used now. Reflecting mirrors are used at times when lesions of the cutaneous orifices are treated with solar radiation.

Ultraviolet Generators.—The Finsen lamp and its modification, the Finsen-Reyn lamp, so valuable for the treatment of lupus vulgaris, are not, for economic reasons, used in this country.

In this country, practically all dermatologists employ air-cooled quartz mercury arc lamps for the irradiation of large surfaces and the water-cooled quartz mercury arc lamp for special purposes, purposes that are enumerated later. In Europe, some dermatologists employ carbon arcs, some use quartz mercury arcs, while a few utilize both types. Many dermatologists prefer the carbon arc because, when properly constructed and operated, it provides an intense ultraviolet radiation with a spectrum approximately that of the sun. They aver that radiation of these wavelengths is most beneficial for the treatment of skin diseases. Also, when it is desirable for any reason to use shorter wavelengths, they may be obtained with suitably cored carbons. It is asserted that infra-red rays, emitted in large quantities from the carbon arc, add to the efficacy of the ultraviolet ray application. Those who prefer quartz mercury arc generators believe that the shorter wavelengths obtained from such lamps are more effective than are the longer wavelengths. Because of less heat, such lamps can be placed closer to the skin, thereby making the time of exposure shorter. So far as concerns the comparative effect on skin diseases of the two types of generators, there is no convincing, scientific evidence in support of either. Much of the evidence is clinical and based on impressions and beliefs. In general, it seems that the effect on skin diseases is much the same with solar radiation, quartz mercury arcs and carbon arcs, provided each method is properly used. The foregoing statement is a general one and does not apply to every skin disease or to every type of generator; also, it may have to be modified after extensive experience with homogeneous radiation of various wavelengths.

As yet there has been very little clinical dermatologic experience with the so-called cold quartz lamp which emits intense ultraviolet radiation, most of which is of very short wavelength—about 90 per cent at about 2,537 angstroms. There is the same paucity of experience with especially constructed incandescent bulbs. Such bulbs, when made of special glass and containing mercury vapor, provide a comparatively weak source of ultraviolet radiation whose spectrum is similar to that of solar radiation. As visible light also is emitted, the method has been called dual lighting. The quantity of ultraviolet radiation from this source is probably too small for professional use. Whether or not these lamps and other sources of small ultraviolet output, such as the five ampere carbon arc, will prove of value for the supervised home treatment of some of the dermatoses cannot be definitely answered at the present moment. In a few instances, such treatment has been found beneficial as an adjuvant in the management of acne vulgaris, but, in general, my experience has not been encouraging.

There is a large variety of ultraviolet generators on the market. The physics of such generators and the radiation obtained therefrom have been described in these columns. A detailed description of the apparatus and instructions relative to their mechanical operation are provided by manufacturers.

TECHNIC

Various devices have been suggested as aids to accurate dosage. Dosimeters are available which determine with fair accuracy the intensity of ultraviolet radiation; also colorimeters to gage the degree of erythema evoked. These instruments are an aid to accuracy, and a dosimeter is useful for frequent checking of intensity, but they are not essential for routine daily work and are seldom employed by practicing physicians.

Practically all dermatologists depend on an arbitrary standard—the erythema dose. This is determined by experimenting on small areas of the operator's own skin. The lamp is placed at a definite distance from the skin (the distance is measured from the source of radiation). Graded exposures are made to small areas on the flexor surface of the forearm, beginning with thirty seconds and increasing to two or three minutes or longer, depending on the power of the lamp. Erythema develops in a few hours if sufficient radiation has been applied. In this way the time of exposure is ascertained for the particular lamp at the particular distance. The exposure time may then be divided for so-called suberythema doses, half erythema dose, and so on. For stronger treatments, time may be increased or the dis-

tance may be shortened. Approximately, intensity (total energy utilized) varies as the time and inversely as the square of the distance. In other words, if the time is reduced by one half, the dose will be one half; if the distance is cut in half the dose will be increased approximately four times. Allowances are made for possible variations in toleration due to age, sex, complexion, part of body and overlapping, by administering a very small initial dose—about one eighth of the erythema dose. All quartz lamps should be tested with a dosimeter or by skin effects frequently so as to compensate by additional exposure time for loss of intensity caused by deterioration of the burner.

For the treatment of some dermatoses it is advisable to apply ultraviolet radiation locally, with or without pressure. For certain other skin diseases, irradiation of the entire body is indicated. This means that for some diseases a water-cooled quartz mercury arc lamp is used at various distances from the skin and at times with a quartz applicator for compression. In the absence of a dosimeter or, in fact, in addition to a dosimeter, the erythema dose should be ascertained with and without compression and at various distances, by the simple method previously outlined. The same procedure is followed when using a carbon arc or an air-cooled quartz mercury arc for small areas.

It is customary to employ either a carbon arc lamp or an air-cooled quartz mercury lamp for irradiation of large areas or for the entire body. The farther away the source of radiation, the more perpendicular are the rays. At a short distance the periphery of a large area will receive considerably less radiation than its center. This is because the oblique rays travel a greater distance and because they are more likely to be reflected. It is usual to place a 20 ampere carbon arc at a distance of 3 feet. Air-cooled quartz mercury arc lamps are placed at various distances, the usual distance being about 18 inches.

There is considerable difference of opinion relative to the exact technic that should be employed for general body irradiation. Some believe that it is unnecessary to expose more than one third or one half of the body, while others are of the opinion that most of the body surface should be subjected to irradiation. In the absence of exact scientific knowledge it seems preferable to expose, at each sitting, as much of the body as is practicable. This statement applies both to solar radiation and to ultraviolet radiation from artificial sources. Some physicians have the patient sit in a chair. The majority of American dermatologists prefer the reclining position. Those who use a 20 ampere carbon arc at a distance of 3 feet place the lamp opposite the chest and then opposite the thighs, permitting the radiation from the two exposures to overlap. Similar exposures are then given to the back. When using an air-cooled quartz mercury arc lamp at a distance of 18 inches, it seems preferable to use three exposures for the anterior surface and three for the posterior surface, the levels being roughly the nipples, the umbilicus and the thighs. The radiation from the various exposures are, of course, allowed to overlap. When the patient is a large person, it may be advisable to expose the lateral surfaces of the body also.

The common type of carbon arc lamp cannot be placed over the patient when the patient is reclining. It may be placed first to one side and then to the other side of the patient at a level considerably above the body and opposite the anatomic points mentioned. The radiation from the two sides overlap first the anterior surface and then the posterior surface of the body. It is customary to place the air-cooled quartz mercury arc lamp directly over the patient, but there is a possible danger in doing so. If the burner should break, hot particles might fall on the patient and produce severe burns.

When using intense ultraviolet radiation it is important that the eyes of both the patient and the operator be adequately protected with dark glasses fitted with side pieces.

DOSAGE

Large Areas.—When the entire body or an extensive area is irradiated, it is the consensus that the first dose should be very small. In order to avoid undesirable constitutional and cutaneous reactions, the initial dose should be not more than a small fraction of that required to cause erythema in the particular patient. Subsequent doses should be graded in relation to toleration, indications and contraindications. Certain fairly widespread eruptions require erythema doses, but as a routine it is advisable to avoid erythema. The exceptions will be given later. As a rule, with or without the production of tan, toleration increases during a course of treatment. It is customary, therefore, to increase the time of exposure at each sitting. It is not advisable to formulate definite rules in this respect because so much depends on the quality and the quantity of radiation—the type and power of the ultraviolet generator, the condition of the quartz mercury burner, the toleration of the patient and the disease treated. A great deal must be left to the judgment of the physician. Roughly, the first exposure may be fifteen seconds. If there are no contraindications, the next exposure may be thirty seconds. Each exposure may now be increased by five seconds until the exposure time for each part of the body is one minute. Every few treatments the time of exposure is increased from five to fifteen seconds until each part is receiving several minutes. Then if still greater dosage seems advisable, and in order to save time, the distance is reduced inch by inch. Many patients, after a course of treatment, tolerate a total exposure of an hour or more, especially if they are well tanned and the lamp is at the original distance. On the other hand, some persons do not tan and do not tolerate any but small doses. It is advisable, therefore, to begin and to proceed cautiously. Contrary to popular opinion, tan is not necessary for therapeutic results. If, for any reason, a course of treatment is interrupted for a week or two, it is advisable to reduce the dose when the exposures are again given.

The frequency with which general body irradiation should be given is debatable. This, too, depends on the disease, the toleration, the object of the treatment, and the judgment of the physician. When attempting to influence the general constitution, some physicians prefer to give an erythema dose to one or two fairly large areas (back, chest and abdomen) and repeat such treatments at intervals of a week or two. This may be desirable when it seems advisable to produce a mild general shock, but as a routine it is preferable to give suberythema and smaller doses several times weekly, preferably daily, either in the office or in the home under medical supervision. There are a few skin diseases with fairly extensive eruptions in which an erythema dose may be given with considerable safety and often with good results, such as widespread acne vulgaris and pityriasis rosea; but erythema doses are likely to produce undesirable results in many if not most

of the generalized dermatoses that may be benefited by ultraviolet radiation.

What has been stated in the last few paragraphs relative to the administration of artificially produced ultraviolet radiation applies also to heliotherapy.

Because of a paucity of scientific knowledge it is advisable not to give sole credit to ultraviolet rays (general body irradiation) for good results obtained. There is some evidence to support the belief that visible light, moving air acting on large areas of exposed skin, varying temperature, and other factors, may play a rôle in these results. Also one must keep constantly in mind the possibility of coincidence and psychologic effect.

Small Areas.—In dermatology, small areas denote a restricted eruption, often a chronic condition. The dose required will depend on the disorder and may vary from a fraction of that required for an erythema to an amount that will produce edema, blistering and erosion. These indications will be given later.

UNDESIRABLE RESULTS

Many of the inflammations, especially when acute or subacute (eczema, psoriasis, and the like) may be made more acute and may be made to spread or change character by too vigorous treatment with ultraviolet radiation. For instance, a patch of subacute eczema of any type may change to exudative eczema and may then become more or less generalized (infectious eczematoid dermatitis). A patch of chronic psoriasis will usually tolerate and may even be benefited by an erythema dose. On the other hand, the patch may spread over the area of erythema if the normal skin is not protected. When treating individual lesions of any dermatosis, it is advisable to protect the surrounding normal skin. When more or less generalized psoriasis, especially if it is of the more acute or inflammatory type, is too vigorously treated, it may change to universal psoriasis or dermatitis exfoliativa. The same phenomenon is observed at times in cases of eczema. It is admitted that vigorous treatment may at times make large patches of psoriasis and eczema disappear, but such treatment is risky.

Large doses of solar radiation and of artificially produced ultraviolet radiation may precipitate attacks of herpes simplex and lupus erythematosus. Erythema and even suberythema doses of ultraviolet radiation applied to the normal skin of patients suffering from lupus erythematosus may cause the development of the disseminate type of the disease. In certain individuals infra-red rays or any form of heat applied for a considerable period will provoke a mottled erythema and pigmentation known as erythema ab igne.

The so-called sailors' skin or farmers' skin is a presenile condition of the skin of the exposed parts occurring in presumably idiosyncratic persons who are exposed to solar radiation more or less constantly for many years. The skin is wrinkled and dry, and keratoses of the senile type are likely to develop. These in turn not infrequently change to malignant cancer. Farmers' skin may consist only of permanent freckles, most commonly seen on the shoulders, the upper part of the back, the chest and the backs of the hands. These freckles are not especially dangerous but occasionally one may change to a keratosis and later to cancer. Farmers' skin in many ways resembles the so-called x-ray or radium skin (x-ray or radium sequelae). It also resembles xeroderma pigmentosum, a condition due to exceedingly low cutaneous tolerance to light. It becomes manifest on the exposed parts of such patients early in life, being most marked on the face. The eyes are congested; the skin is dry and atrophic; ectropion develops, and there are innumerable freckles of the permanent type and keratoses of the senile type. Curiously, many of these keratoses change to basal cell epitheliomas rather than to epitheliomas of the prickle cell variety. Patients who have a low cutaneous toleration to light should not only avoid direct sunlight and artificially produced ultraviolet radiation but should avoid strong daylight, because diffused sunlight and reflected light from snow, water and sand contain large amounts of ultraviolet radiation. If such patients find it necessary at times to be exposed to strong solar light, the face and hands should be protected with veils, walnut stain or creams containing dark substances, such as burnt sugar or sulphonated bitumen. For very mild cases, a coating of yellow petrolatum followed perhaps by a dark-colored powder may provide sufficient protection. The fad of exposing bodies of children to solar radiation and artificially produced ultraviolet radiation daily and indefinitely without medical supervision may eventually give rise to farmers' skin in a small percentage of children who happen to be idiosyncratic.

Hydroa vacciniforme is a rare bullous disease, mostly of children, limited to the exposed parts and occurring during the spring, summer and fall. The etiology is supposed to be associated with the effect of light on the skin of a susceptible person. Hematoporphyrin has been found in the urine of these patients, and it is thought that this and other substances may have something to do with sensitization to light. In the same category may be placed pellagra and summer prurigo. Melanosis, simulating chloasma and argyria, has been reported following sunburn.

Certain substances when injected into the body or painted on the skin appear to cause sensitization to light. There is one instance in the literature (Meyer-Betz) in which hematoporphyrin was injected. Exposure to the light caused edema of the hands and face. Eosin, when painted on the skin, combined with exposure to light, may result in severe dermatitis. Oil of bergamot and perfumes on the skin may be followed by dermatitis and pigmentation on even mild exposure to sunlight or ultraviolet radiation (Berloch dermatitis). Attempts, in this way, have been made to modify or cure leukoderma with occasional success.

Skin that is affected with certain diseases, especially with the desquamating fungous diseases such as chromophytosis, when subjected to radiation that causes tanning may assume a peculiar appearance, so much so as to interfere with diagnosis. Chromophytosis is a good example. The patches of eruption are of a yellowish brown. The surrounding normal skin tans so that its color matches fairly well that of the affected areas. The patches of disease do not tan because the slightly thickened horny layer absorbs the radiation. Exfoliation of this horny layer leaves white patches, which are in sharp contrast to the surrounding tanned skin.

Urticaria and certain forms of recurrent acute dermatitis of the face, neck, forearms and hands are at times thought to be due to sensitization to light.

Conjunctivitis and other eye troubles may be caused by excessive exposure to direct sunlight, reflected sunlight and radiation from ultraviolet generators. Depending on the exposure and the susceptibility, the inflammation may be slight or severe, transient or persistent. Arctic explorers and mountaineers occasionally

have "snow blindness." In the industrial field, acetylene and arc welders have trouble with their eyes unless they wear goggles.

Ordinary glass will protect the eyes from ultraviolet rays, but, for protection from all ultraviolet wavelengths and visible light, it is preferable to use glass of a dark color—amber, green, black. It is important that the goggles be edged with soft, opaque material that will obstruct the passage of light between the goggles and the skin.

Sunburn.—Ordinary sunburn is known as erythema solare and dermatitis actinica. In this category may, of course, be placed burns caused by ultraviolet radiation from any source. The reaction may consist of no more than a slight erythema—a flush—or a marked erythema accompanied by a sensation of heat followed in a few days or a week by itching and exfoliation. If the reaction is more severe there is edema, vesiculation, erosion and perhaps exudation. The subjective symptoms are burning and itching. Depending on the degree of reaction, spontaneous recovery occurs, as a rule, in from a few days to a few weeks. Occasionally recovery is delayed. Erythema and edema have been known to endure for months. Regardless of severity, in the absence of complications sunburn does not produce a scar. When the area burned is extensive, there may be constitutional symptoms consisting of malaise, headache, fever and vomiting. In fact, a more or less severe constitutional reaction may occur in the absence of a burn when radiation is applied to the entire body. Such a reaction indicates that the dose is too high for the individual.

Mild and moderate local sunburn requires little if any treatment. Ointment of rose water or almond emulsion may allay the sensations of burning and dryness. When such a burn is extensive and especially when accompanied by constitutional symptoms, the patient may have to spend a few days in bed. Whether the burn is local or more or less generalized, the type of topical treatment indicated depends on the cutaneous objective and subjective symptoms. Constant wet dressings of boric acid, sodium bicarbonate, watery extract of witch hazel or diluted solution of aluminum acetate are indicated when there is vesiculation, erosion and exudation, or when the burning sensation is distressing. When the skin is inflamed and dry, applications of the following lotion may be prescribed:

	Gm. or Cc.	
℞ Zinc oxide		
Magnesium carbonate āā	8	ʒ ii
Alcohol	15	ʒ ss
Menthol	3	gr. iv
Phenol	2	ʒ ss
Lime water, q.s. ad	120	ʒ iv

Unscented cold cream containing 1 grain (0.06 Gm.) of menthol and 1 drachm (4 Gm.) of petrolatum or hydrous wool fat to the ounce (30 Gm.) may be used for the same purpose.

Tan and ordinary freckles disappear completely in time, provided light is avoided. Their disappearance can be hastened by the application of lotions and creams that encourage desquamation. Formulas for such remedies are in all textbooks on dermatology.

DISEASES IN WHICH ULTRAVIOLET RADIATION MAY BE USEFUL

There is hardly a skin disease or condition for which some physician has not failed to claim good results with ultraviolet radiation. Most of these claims are the result of clinical impressions on physicians who have little if any knowledge of dermatology. Coincidence, effect of contemporaneous therapy, and faulty diagnosis have not been guarded against by adequate controls. Therefore, most of these therapeutic claims have not been corroborated and may be disregarded.

The subjoined list of dermatoses comprises diseases in which alleged good results have been obtained by at least several prominent dermatologists, or by physicians who are expert in the therapeutic use of light.

The letters in the list signify the routine technic in general use by American dermatologists:

A. Frequent general irradiation of the entire body or of large areas of normal skin with doses too small to evoke erythema, for the purpose of influencing the disease through possible systemic action of the radiation.

B. Frequent irradiation of generalized or fairly extensive eruptions with small or at least suberythema doses.

C. Irradiation of fairly extensive eruptions with erythema doses. There may be but a single treatment, or treatments may be given once or twice a week or even daily, depending on the results desired and obtained, toleration, and the like.

D. Irradiation of circumscribed eruptions or lesions with erythema and blistering doses. Treatments are not repeated until all evidence of reaction has disappeared.

Alphabetical List of Diseases

Acne conglobata—acne cachecticorum, A, B
Acne varioliformis, C
Acne vulgaris, A, C
Adenoma sebaceum, D
Alopecia areata, C, D
Alopecia praematura, C
Angioma serpiginosum, C
Cicatrix—pitted scars, D
Dermatitis herpetiformis, A, B, C
Dermatophytid, B
Dermatophytosis, B
Eczema—various types, B
Erysipelas, B, C
Erythema induratum, A, B, C
Folliculitis—pustular, A
Furunculosis, A, D
Herpes zoster, B
Leukoderma, C
Livido reticularis, B
Lupus erythematosus, A, B, D
Lupus vulgaris, A, D
Neurodermatitis—circumscribed, C, D
Neurodermatitis—disseminate, A, B
Nevus flammeus (port-wine mark), D
Parapsoriasis, C
Pernio, B
Pityriasis rosea, C
Pruritus—secondary, A, B, C
Psoriasis, A, D
Scleroderma, A, B
Scrofuloderma, A
Sycosis vulgaris, A, B, C
Telangiectasia (x-ray and radium sequelae), D
Ulcers and wounds—indolent, B, C, C

It appears to be the general impression in the medical profession and among lay persons that ultraviolet radiation is of great value in dermatology. There is evidence sufficient to justify the belief that ultraviolet radiation is a valuable remedy for erysipelas and for certain types of cutaneous and subcutaneous tuberculosis. It is reasonably well established that ultraviolet radiation is at times useful either alone or as an adjuvant for the treatment of acne vulgaris, adenoma sebaceum, pityriasis rosea, parapsoriasis, psoriasis, telangiectasia, indolent ulcers and wounds, and port-wine stains. So far as concerns the other diseases in the list given, there is some difference of opinion among dermatologists, but the majority, while admitting occasional good results that appear to be due to the radiation, do not consider it an important agent in the management of these disorders.

Some physicians believe that ultraviolet radiation improves the complexion, that it improves its texture and color. Such statements are not in agreement with the consensus of dermatologic opinion.

THE PRACTICAL APPLICATION OF ULTRAVIOLET RADIATION

Diseases Due Partly or Wholly to Pyogenic Organisms.—Acne Vulgaris: At least 60 per cent of the patients can be cured with conventional dermatologic therapy in from a few months to a year without recourse to physical therapy. Such treatment embraces the proper choice of topical applications, adequate instruction and advice, attention to hygiene and diet, and attention to various possible internal disturbances, such as abnormalities of the gastro-intestinal tract and pelvic organs, secondary anemia and the like.

Erythema or flushing doses of artificial ultraviolet radiation or solar radiation once or twice a week, or daily if toleration is high, will very often cause the eruption to improve or disappear but, unfortunately, recurrence is the rule. Rapid temporary improvement, in selected cases, is obtained often by producing an acute reaction followed by desquamation. Most dermatologists agree that the radiation is a useful adjuvant when treating recalcitrant cases. In such instances it supports topical remedies and other conventional measures. It may be combined with x-rays, but, if so, it is advisable to avoid erythema.

Acne vulgaris is divided into a number of clinical varieties. The intelligent management of the disease requires a clinical knowledge of the various types because the therapeutic indications differ somewhat with the type. Acne indurata is the common type. It is encountered mostly in late adolescent and early adult life. It is chronic in course and appearance. In addition to comedones, patulous follicular orifices and scars, there are numerous large, deep-seated pustules and perhaps occasional indolent cystlike lesions. The skin is likely to be excessively oily. This type usually tolerates vigorous treatment and responds well to such treatment.

The more acute types—acne pustulosa and acne erythematosa—are more likely to be associated with detectable and correctable systemic disturbances. It is advisable to begin treatment with soothing topical remedies before resorting to physical therapy.

Comedo and acne papulosa are seen most often at puberty. The lesions consist of blackheads and papules. There may be also some pustules and an oily skin. At times these types disappear spontaneously or yield quickly to stimulating topical remedies. Not infrequently, however, it is impossible to cure the puberty cases permanently until the patient is a year or two older. It is possible, as a rule, to control the disorder through this period with suitable topical remedies or with ultraviolet radiation, or both. It is important to do so; otherwise acne indurata, oily seborrhea, scars and a coarse skin are apt to develop.

Ultraviolet radiation has been blamed for superfluous hair in cases of acne vulgaris. It is generally agreed that this agent cannot make hair grow on glabrous skin. Hypertrichosis in association with acne vulgaris has been noted in the absence of local treatment of any kind. However, when girls and women have a tendency to grow hair on the face, it is theoretically possible that the frequent application of any remedy producing hyperemia might encourage the growth.

Rosacea and Rhinophyma: Rosacea can almost always be cured by giving adequate attention to the internal causes combined with suitable topical remedies. Radiation is of little if any value for pure rosacea. As a rule, ultraviolet radiation is not well borne, although it may be of service in an occasional selected case. So far as concerns local treatment, the best results in cases of hypertrophic rosacea and rhinophyma are obtained with multiple scarification, surgical diathermy and scalpel surgery.

Acne Varioliformis: Ultraviolet radiation is of doubtful value.

Sycosis Vulgaris: Ultraviolet radiation appears to have very little effect on the disease. Under the heading of sycosis may be included chronic pustular folliculitis of the bearded region of male adults, the eyebrows, the scalp and the pubic region. In such cases general body irradiation with solar or artificial ultraviolet radiation may be tried, but there is no real evidence that such treatment is of value.

Furunculosis and Carbunculosis: Many physicians believe that an erythema dose or a blistering dose of ultraviolet radiation, preferably with a water-cooled lamp with compression, when applied to a boil in the very early stage of evolution, will either abort the lesion or greatly modify further development. In the hands of most dermatologists, this procedure has been uncertain and disappointing. Recurrent boils indicate some constitutional fault—organic, functional or immunologic—which must be corrected if possible. In such instances it is possible that a long course of general body irradiation, using either the sun or an artificial source of light, might prove beneficial. The impression is that such treatment is helpful although there is no conclusive evidence that this is so.

Erysipelas: Good results have been obtained in this disorder with both x-rays and ultraviolet rays. Daily suberythema doses of ultraviolet radiation are reported by many physicians as being effective. In addition to the diseased area, considerable normal adjacent skin should be irradiated.

Erysipeloid of Rosenbach may be treated in the same manner. The so-called recurrent erysipelas and patches of chronic streptococcic lymphangitis (elephantiasis nostras) are at times apparently benefited by x-ray treatment. So far as I know, ultraviolet radiation has not been tried in these conditions. Naturally, one should search for and destroy, if possible, the focus of infection.

Indolent Ulcers and Wounds: Occasional erythema doses of ultraviolet radiation or daily treatment with graduated doses of solar radiation or artificial ultraviolet rays seem to be helpful in some cases.

Miscellaneous Pyogenic Disorders: Ultraviolet ray treatment or heliotherapy may be of service in cases of acne conglobata (acne cachecticorum) but the result is usually disappointing. Good results have been reported with ultraviolet radiation in cases of perifolliculitis capitis abscendens et suffodiens but the evidence is insufficient for an evaluation.

Diseases Due to Fungi.—Many of the fungous dermatoses—blastomycosis, actinomycosis, onychomycosis—have been treated with ultraviolet radiation with poor results. Perlèche, a disease of the buccal commissures, may be due either to bacteria or to fungi. Ultraviolet radiation has not proved efficacious in this disease. Many eruptions due directly or indirectly to fungi are known as dermatophytosis and dermatophytid. These disorders are discussed under the heading of eczema.

Eczema: It no longer suffices to say that a certain agent is of value in the treatment of eczema. Such a statement is too vague. Today the unqualified term eczema signifies inflammation of the skin (dermatitis) having certain characteristics that are not so frequently encountered in other eruptions. The eczema of our forefathers has been divided by clinicians into a number of clinical types, each type having a somewhat different cause and exhibiting fairly definite characteristics. While the therapeutic indications are somewhat different for the various types, each clinical entity has certain features that are common to all.

Eczema venenatum (dermatitis venenata) is caused by external contact with a substance to which the patient has become sensitized. Well known examples are rhus dermatitis, dye dermatitis and trade eczema. Naturally, the logical procedure is to ascertain and remove the cause. Ultraviolet radiation is not indicated in this type.

Dermatophytosis is a convenient term coined by Highman to indicate eczema caused by fungi, of which there are several types. The interdigital variety is seen between the toes and consists for the most part of thickened, white, macerated skin. The vesicular variety occurs mostly on the hands and feet and must be differentiated from eczema venenatum and pompholyx. To general practitioners and to the public these conditions are known as ringworm and the ridiculous "athletes'" foot. The keratotic type occurs mostly on the palms and soles and consists, as the name implies, of a thickened horny layer. These are the common types of dermatophytosis. Other varieties consist of marginated patches of eczema occurring in the crural region, axillae, umbilicus, under pendulous breasts and on other parts of the body; ill defined scaly patches with no topographic predilection; and erosio interdigitalis blastomycetica, which occurs between the fingers. Ultraviolet radiation has been advocated, but the results do not warrant its recommendation.

Infectious eczematoid dermatitis is a more or less generalized eczema that develops secondary to a discharging sinus, ulcer or wound. I have had no success with ultraviolet radiation in this type.

Neurodermatitis occurs in two forms—circumscribed and disseminate. The circumscribed type (lichen chronicus circumscriptus) is seen mostly in adults and resembles patches of chronic lichen planus and shows a predilection for the flexures—the sides of the neck, the cubital and popliteal spaces, and the flexor surfaces of the thighs; and for certain extensor surfaces—the elbows and knees—when it may exhibit a marked resemblance to psoriasis; and the back of the neck in women (eczema nuchae). The Fox-Fordyce disease of the axillae and pubic region is probably a rare type of circumscribed neurodermatitis. Patches of circumscribed neurodermatitis range in size from a dime (18 mm.) to an adult palm. A full erythema dose of ultraviolet radiation may be followed by improvement, but the results are uncertain.

The disseminate type of neurodermatitis, when severe, is one of the most recalcitrant and distressing of the dermatoses. It occurs for the most part in patients who give a personal or family history of allergic disorders—urticaria, hay fever, asthma—and the patient is often sensitized to a large number of substances—food proteins, epithelial products (hair, feathers, dander), pollens and bacterial proteins. The neurogenic factor is prominent, and there may be endocrine dysfunction. The disease is common in infants, children and adolescents, less common in young adults, and uncommon in older persons. There are acute exacerbations and remissions, both of which may be of short or long duration. Itching is likely to be almost intolerable.

There is a difference of opinion regarding the efficacy of ultraviolet radiation (general body irradiation). Certainly many of these patients improve when they are able to indulge in heliotherapy, but it has been impossible thus far to determine whether the improvement is due to a combination of environmental factors (rest, relaxation, contentment, salt water bathing, effect of moving air on the naked skin, change of climate, escape from causative proteins) or to ultraviolet radiation. I have obtained only occasional good results, apparently with artificial ultraviolet radiation, and in these instances improvement might have been due to other factors. Many patients appear to be made worse even with small doses of ultraviolet radiation. Amounts sufficient for erythema are likely to precipitate an exacerbation. Many of these patients have a low toleration for radiant heat.

Eczema seborrheicum (dermatitis seborrheica) presumably a bacterial, rather polymorphous, type of eczema, in its most simple form may consist of dandruff, a few scaly patches on the face and ears, or excessive oiliness of the face and scalp. The more severe eruptions consist of exudative and crusted patches on the head, scaly patches and patches of follicular papules on the trunk, and erythematous scaly patches under pendulous breasts and in the pubic and crural regions. It is often difficult to differentiate between seborrhea, dermatophytosis and psoriasis. Occasionally, ultraviolet radiation appears to give good results, especially erythema doses for chronic, dry patches, but in general it may be stated that ultraviolet radiation has not been of much service in the management of this form of eczema.

Eczema hemostaticum (dermatitis hemostatica) occurs on the legs, of elderly persons mostly, and is due primarily to poor local circulation caused by varicose veins, cardiovascular disturbances, renal inefficiency, tight circular garters and so on. Additional causes are scratching and infection with pyogenic organisms. The principal treatment consists of support for the circulation (elastic stockings) and the correction of constitutional disturbances. Ultraviolet radiation appears to be of benefit for the indolent ulcers that so often complicate the disorder and it may be of service when the skin is markedly thickened. On the whole, however, ultraviolet radiation is not efficacious for this type of eczema.

Intertrigo is an erythema occurring in locations in which the parts are in contact (axillae, crural region) and is due to friction, heat and unhygienic conditions. Dermatitis, with edema, exudation and crusting may develop (eczema intertrigo). Differentiation must be made from dermatophytosis. Ultraviolet rays have been used for recurrent eruptions with questionable results.

The term infantile eczema is thought by many to indicate a definite clinical type of the disorder. The term really signifies no more than eczema occurring in an infant. Usually such eczema is one of the types that have been enumerated or a combination of two types. So far as concerns physical therapy, there are no special indications other than those found throughout the section dealing with eczema.

Frequently, indeed, it is impossible to place a case in any of the clinical entities mentioned. In such cases the diagnosis is eczema. A great many names have been handed down from dermatologic predecessors to signify the location or clinical appearance of the eruption and such terms are still in use—eczema acutum, chronicum, erythematosum, vesiculosum, exudativum, impetiginosum, squamosum; eczema capitis, faciei, labiorum, palpebrarum, genitalium, mammae.

Many dermatologists claim that ultraviolet rays are useful for many varieties of eczema and in selected cases this is possibly true, but in general terms American dermatologists agree that ultraviolet radiation is not of much value in this disease. It is not indicated in acute eczema. General body irradiation may be of some value in selected cases of chronic eczema. At times, any agent that will evoke hyperemia in a patch of chronic squamous eczema will hasten recovery, and ultraviolet radiation may be used. But in doing so, judgment is required; otherwise the condition is apt to get worse instead of better. Such treatment may be successful but the physician is taking a risk.

Psoriasis, Parapsoriasis, Dermatitis Exfoliativa, Lichen Planus: In psoriasis, ultraviolet radiation in amounts sufficient to cause erythema, applied to the individual lesions about once a week, will at times promote resolution. Such treatment, however, is not particularly efficacious and, if the erythema involves the normal skin, the lesion may spread over the entire area of erythema.

Daily heliotherapy to the entire body, irrespective of the location of the eruption, or daily general body irradiation with artificially produced ultraviolet rays, is thought by many dermatologists to be of value. Hazen found, by studying his statistics, that remissions were longer with this than with any other method of treatment. It is advisable to avoid erythema because the too vigorous treatment of psoriasis, especially the more acute types, may favor the development of dermatitis exfoliativa. In fact, radiation is contraindicated in the acute types. If general body irradiation is proved to be of real value it would seem to be a particularly favorable treatment for children. The most that can be hoped for in psoriasis is control of the disease; it cannot be cured.

Howard Fox, Wise and others have reported remissions in parapsoriasis, an incurable disease, with erythema doses of ultraviolet radiation. It is the only treatment that appears to have any effect, but the results will have to be corroborated before the treatment can be recommended. There are several types of the disease only two of which have, at the present writing, responded temporarily to the treatment—the papular and the plaque or patch types.

Ultraviolet radiation has not been found useful in dermatitis exfoliativa.

Pruritus; Prurigo.—Ultraviolet radiation by some is recommended for the various types of essential pruritus —pruritus ani, pruritus vulvae, so-called senile pruritus —but the majority of dermatologists have not been favorably impressed with the results. Erythema doses may increase the pruritus.

Ultraviolet rays have been advocated for the relief of pain associated with diseases such as zoster. They appear to be of little service for this purpose.

Prurigo nodularis does not yield well to ultraviolet rays, although a few apparently satisfactory reports have been published. The same statement applies to prurigo mitis and prurigo ferox.

Diseases of the Appendages.—In hyperhidrosis, ultraviolet radiation is not effective as a rule.

There is some doubt as to the identity of pompholyx. Some insist that it is an entity, while perhaps the majority believe that it is a variety of dermatophytosis or dermatophytid. Often it is but a transient eruption. In any event, ultraviolet ray treatment has proved disappointing.

For the purposes of the present discussion, alopecia may be divided into alopecia areata and alopecia prematura. The first consists of circumscribed bald patches on the scalp or face. In some instances the entire scalp, the face and even the trunk and extremities may be involved—alopecia totalis. The cause is not known. It may be endocrinologic or neurogenic.

Alopecia prematura may be divided into cases caused by seborrhea capitis (alopecia seborrheica) caused by systemic disturbances such as acute febrile diseases, chronic systemic disorders, neurogenic factors (alopecia systemica) and those cases for which no cause can be found except a family history of early baldness (alopecia idiopathica or hereditaria). Rare types of alopecia, such as alopecia congenita, may be disregarded.

Ultraviolet radiation has been used a great deal by a large number of dermatologists and others in the treatment of all types of alopecia. Some believe that it is useful. A greater number think that it is less efficacious than more easily applied topical remedies. There is now fairly general agreement that ultraviolet radiation is in no sense a specific, that it is not a "hair grower." In amounts insufficient to produce erythema it appears to be useless. Quantities sufficient for vigorous hyperemia probably do no more than hyperemia evoked by any agent—phenol, for instance. If this is conceded, ultraviolet radiation may be considered to be a useful adjuvant for the treatment of alopecia areata and the several types of alopecia prematura. It is not improbable that recovery in many cases of alopecia areata is spontaneous. The prognosis in alopecia idiopathica is unfavorable. If proper attention is given to the constitutional disturbances in cases of alopecia systemica, the prognosis is excellent. Early cases of alopecia seborrheica respond favorably to topical applications. Finally, it may be stated that all types of alopecia can be handled as successfully without as with ultraviolet radiation.

Tuberculosis of the Skin and Allied Conditions.—Lupus Vulgaris: Ultraviolet radiation has given very satisfactory results in all types of lupus vulgaris. A great deal of time and patience is required but the results usually reward the effort. Concentrated carbon arc light therapy by the Finsen method gives the best results, so far as concerns regional treatment. Good results, also, may be obtained with the water-cooled quartz arc lamp, especially when it is possible to dehematize the area by pressure with the quartz frontpiece on the lamp. Dehematization may be obtained, also, with local injections of tuberculin, but the results are not so good as with compression. The dose must be heavy—several or many times the erythema dose at each sitting. The reaction, of course, is severe, and the treatment is not repeated until the reaction has disappeared. Such large doses require from five to twenty minutes, and, as only a small area (a square inch or two) is covered in one exposure, a great deal of time is required for the treatment of extensive eruptions.

There is enough reliable clinical evidence available to give substantial support to the belief that daily general body irradiation (solar or artificial ultraviolet radiation) is of real value. Such treatment may have to be continued for several or many months, but the results seem to warrant the effort and expense. Ultraviolet therapy may be combined with other treatment, such as tuberculin injections, the Gerson-Sauerbruch diet and, if proper precautions are taken, with x-ray treatment. It is not, of course, possible to cure all cases. There are a number of complications, such as tuberculous lymphangitis and visceral tuberculosis, which may prevent the patient from reacting favorably to any treatment.

Lupus Miliaris Disseminatus: So far as I know, this type of true cutaneous tuberculosis has not been treated with ultraviolet rays. The eruption is likely to disappear spontaneously in a few months.

Lupus Erythematosus: Radiation is apparently not of much value in this condition. At times, discoid patches may be benefited with erythema doses of ultraviolet rays, but they may also be made worse by such treatment. General body irradiation may be beneficial in some cases, but care must be used, for erythema is followed at times by the precipitation of disseminate lupus erythematosus. Years ago, radiation was used more than at present. Gold therapy has given such satisfactory results that other therapeutic methods are used mostly as adjuvants in selected cases.

Tuberculosis Orificialis: Good results may be obtained with ultraviolet radiation in cases of tuberculosis of the orificial mucous membranes. However, when the desired result is not obtained in a reasonable time, other local methods, such as the electric cautery or surgical diathermy, should be seriously considered. Most orificial tuberculosis is secondary to involvement of the viscera; therefore, general medical attention is required.

Tuberculosis Verrucosa Cutis (warty tuberculosis of the skin; verruca necrogenica; anatomical tubercle): Ultraviolet rays have not been found very useful in this disease.

Scrofuloderma: Satisfactory results have been obtained in many cases of scrofuloderma with and without tuberculous adenitis. The best treatment appears to be adequate attention to the general health, a suitable diet, and daily general body irradiation with either solar radiation or artificial ultraviolet radiation, preferably the former. Locally applied ultraviolet radiation alone often fails. Stubborn cases, especially when there is an underlying suppurating tuberculous focus (glands, bones), may require surgical intervention.

Erythema Induratum (Bazin's disease): The local application of ultraviolet radiation is of questionable service. These patients should be handled from a general medical standpoint—rest, light exercise, diet, and general body irradiation (solar or artificial ultraviolet radiation).

Sarcoid: Thus far, ultraviolet radiation has not been of real service in the management of the two types of sarcoid (Boeck type and Darier-Roussy type). Statements made under the headings of Bazin's disease and sarcoid apply also to that apparent variant of these conditions, periphlebitis nodularis necroticans.

Granuloma Annulare: Ultraviolet rays appear to be of little if any value in this disease.

Tuberculid: All the tuberculids—papulonecrotic tuberculid, acne agminata, folliclis, acnitis—exhibit eruptions that are evanescent—remissions and exacerbations. Ultraviolet radiation has not proved efficacious. The same statements apply to lupus pernio.

Nevi.—Nevus Araneus: Spider nevi can be eradicated with blistering doses of ultraviolet radiation, but electrolysis is a much better method.

Nevus Flammeus: Port-wine marks are exceedingly difficult to eradicate. Blistering doses of ultraviolet radiation, administered with the water-cooled quartz mercury arc lamp, with compression, may completely eradicate very faint nevi of this type and may reduce the color of more pronounced lesions. However, the treatment is not very satisfactory. It usually requires a dozen or two dozen treatments over a period of a year or two to reduce the color 25 or 50 per cent. It is seldom, indeed, that a well marked lesion is eradicated by this treatment.

Other types of vascular nevi and the pigmented nevi do not respond favorably to ultraviolet ray treatment.

Adenoma Sebaceum: Howard Fox, Hazen, Lewis and others have obtained good results with blistering doses of ultraviolet radiation in this disorder, usually with the water-cooled quartz mercury arc lamp with compression.

Telangiectasia: This condition, when occurring as a sequel to x-ray or radium treatment, can be eradicated with ultraviolet radiation. It is customary to use the Kromayer lamp with compression, although compression is not always necessary. Either the water-cooled or air-cooled lamp at a distance may produce satisfactory results. As pointed out by Hazen and by C. Guy Lane, x-ray and radium skin has a low toleration for such radiation. Therefore, the initial dose should be small. As a rule, it requires from one to several erythema doses or even blistering doses to destroy the capillaries. The author has found it difficult to obtain the correct amount of vascular destruction. When the treatment is too vigorous the treated area is likely to be too white and, also, the atrophy caused by the x-rays or radium becomes more visible.

Miscellaneous Cutaneous Disorders.—Dermatitis Herpetiformis and Pemphigus: There have been numerous reports of good results with general body irradiation with ultraviolet rays in cases of dermatitis herpetiformis and chronic pemphigus. I have given the method a fair trial and am not convinced that the radiation is of value for the purpose. Evaluation is difficult because these diseases are characterized by exacerbation and remission.

Herpes simplex and herpes zoster have been treated with ultraviolet rays. In the former, radiation has been used to prevent recurrent attacks; in the latter, to arrest pain. Radiation, perhaps successful at times, is of questionable value for these purposes.

Scleroderma: Ultraviolet radiation has been advocated for scleroderma, both local applications and general body irradiation being used. The results have not been very encouraging.

Milia: Ultraviolet rays have been tried in a few cases and have not proved beneficial.

Pityriasis Rosea: Hazen, Lewis and others have found ultraviolet radiation useful for shortening the course of pityriasis rosea. One dose, sufficient to cause erythema and exfoliation, may suffice to clear up the eruption. Apparently it is the exfoliation that effects the cure. It is advisable to avoid too severe erythema, especially for the first dose in severe cases. It is customary to give a suberythema dose at the first sitting to determine toleration. A few days later a full

erythema dose may be given. The natural course of this self limited disease is from one to three months. Subjective symptoms usually are mild or absent and the eruption seldom attacks the face and other exposed parts. For these reasons most patients prefer to avoid the discomfort that is likely to be associated with a widespread sunburn. In some cases of pityriasis rosea the eruption is severe; inflammatory and subjective symptoms are annoying. In such instances it is doubtful if ultraviolet radiation is indicated.

Leukoderma: The literature contains many reports of good results in the treatment of this disease with local applications of erythema doses of ultraviolet rays with and without general body irradiation. The modern dermatologic consensus is that the method is almost, if not completely, useless. As a rule, such treatment is likely to make the areas more conspicuous because the white areas do not tan while the surrounding areas become very dark. Recently, occasional satisfactory results have been obtained by painting the white areas with oil of bergamot and applying ultraviolet radiation in quantities sufficient to evoke erythema.

Aitken recommends general body irradiation with ultraviolet rays for ordinary pernio and erythrocyanosis crurum feminarum (a probable variant of livido reticularis) but his results must be corroborated before the treatment can be recommended.

200 West Fifty-Ninth Street.

The Chemical Laboratory

THE FOLLOWING IS A REPORT BY THE AMERICAN MEDICAL ASSOCIATION CHEMICAL LABORATORY. P. N. LEECH, Director.

MONTGOMERY WARD & CO. UNDERTAKES URINE EXAMINING SERVICE

In a recent catalogue, "Ward's 60th Anniversary—1872—Sixty Years of Progress—1932," appears an advertisement of a "new professional service." In boldface type appears the crux of the message: "Your urine should be analyzed at least every 90 days." It is inferred, of course, that this repeating service may be secured through Montgomery Ward & Co. The statement continues:

"Medical authorities agree that an analysis of the urine, even though the person does not feel ill at the time, often reveals sure signs of disease preparing to strike, and enables you to take prompt preventive measures and correct faulty living habits in time.

"To aid our customers in the preservation of health, we have decided to place this service within your reach in a way that spares you all embarrassment and affords you the services of experts who are specialists in this particular branch of medical work; and we have made the cost so moderate that you owe it to yourself and your family to make sure all is well."

The directions for obtaining this mail-order medical service are simple:

"Use a regular Order Blank to order this SERVICE, sending money with order. A special container in a mailing case will be sent to you. You mail it back with a sample of the urine. The laboratory then makes a careful analysis, covering 29 chemical and microscopical tests. You will receive a detailed report showing the complete findings which you can then submit to your physician."

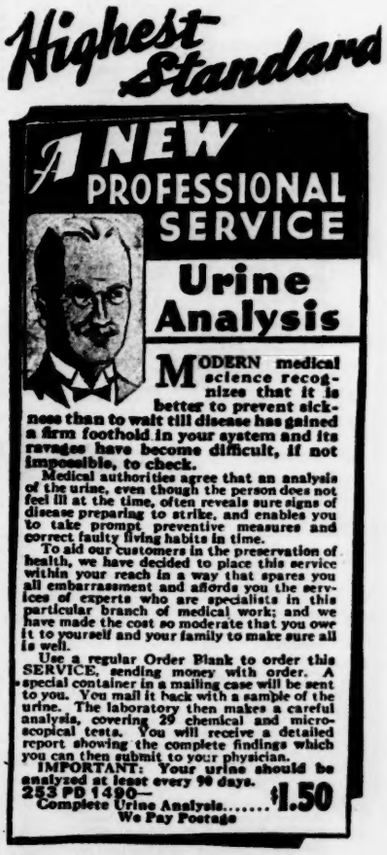
The Chemical Laboratory of the A. M. A. requested five persons to send orders to Montgomery Ward & Co. accompanied by the pre-cash requirement of a money order for $1.50. In due time there came from Montgomery Ward & Co. invoices addressed to each person. On the invoice was stamped this statement: "Within a few days you will receive a container with full instructions from *our* laboratories" [italics ours]. Shortly afterward, each individual received through the mail a container and bottle. This did not come from the Montgomery Ward & Co. home laboratories, as might have been expected from the advertisement, but from the Universal Research Laboratories, Minneapolis, Minn.

The Association has no records in its files concerning the Universal Research Laboratories in Minneapolis, nor have these laboratories been approved by the Council on Medical Education and Hospitals. The small bottle contained a white powder for preservative purposes, with directions to mail the container within twenty-four hours after the urine had been voided. Four specimens of urine, found pathologic by a competent investigator, and one specimen of urine, which was determined to be normal, were sent away in the containers received from the Universal Research Laboratories. In a few days came letters stating that the urinalysis report was enclosed; in each case the letter was almost the same except for the numbers indicated on the report. The letters were written on the stationery of the Universal Research Laboratories, Twenty-Fifth Street at Nicollet, Minneapolis, Minn., and bore the name of "H. W. Darby, M.D., Medical Director." As is so often the case, reference is given on the stationery to a bank—in this case the First National Bank of Minneapolis. By what reasoning a bank is competent to pass on the efficiency of a clinical laboratory making urine tests is difficult to imagine. A typical letter reads:

"Your urinalysis has been completed and we are enclosing your report herewith.

"In checking your report we note indications 5, 25 and 26 show a little faulty but you can correct these, if you will follow directions set forth below the faulty indications, which are self-explanatory.

"Your report is very encouraging nevertheless it is a good idea for you to have these examinations from time to time to check yourself and protect your health."


Highest Standard
A NEW PROFESSIONAL SERVICE
Urine Analysis
MODERN medical science recognizes that it is better to prevent sickness than to wait till disease has gained a firm foothold in your system and its ravages have become difficult, if not impossible, to check.
Medical authorities agree that an analysis of the urine, even though the person does not feel ill at the time, often reveals sure signs of disease preparing to strike, and enables you to take prompt preventive measures and correct faulty living habits in time.
To aid our customers in the preservation of health, we have decided to place this service within your reach in a way that spares you all embarrassment and affords you the services of experts who are specialists in this particular branch of medical work; and we have made the cost so moderate that you owe it to yourself and your family to make sure all is well.
Use a regular Order Blank to order this SERVICE, sending money with order. A special container in a mailing case will be sent to you. You mail it back with a sample of the urine. The laboratory then makes a careful analysis, covering 29 chemical and microscopical tests. You will receive a detailed report showing the complete findings which you can then submit to your physician.
IMPORTANT: Your urine should be analyzed at least every 90 days.
253 PD 1490—
Complete Urine Analysis..... $1.50
We Pay Postage

Advertisement appearing in recent catalogue of Montgomery Ward & Co.

One of the specimens of urine submitted had been found normal by a competent laboratory pathologist. The Universal Research Laboratories, working for Montgomery Ward & Co., reported that this specimen contained a slight trace of albumin, leukocyte cells, and a few epithelial cells; that these conditions are faulty but one could correct them by following the directions. Following each test mentioned in the urinalysis report enclosed with the letter [see insert] appeared directions. In the case of albumin:

"Its persistent occurrence if casts are found indicates inflammation of the kidneys (Bright's Disease or other serious condition). Mild congestion may cause it to appear temporarily. Any appearance calls for further analysis at intervals. If persistent confine yourself to vegetable and liquid diet, eating little or no meats or whites of eggs. If this does not eliminate it promptly, consult your physician."

Under items 25 and 26, epithelial cells and leukocytes:

"Epithelial Cells

"Normally a few squamous cells may be present. These cells usually accompany inflammatory conditions of the genito-urinary tract and if in excess require the attention of your physician."

"Leucocytes (Cells)

"These are white blood cells; the defenders of repairmen of the body, and appear when the bladder, kidneys or ureter are inflamed or injured by disease. Their presence in small amount are found in health at times."

Universal Research Laboratories

25th Street at Nicollet
MINNEAPOLIS, MINNESOTA
U. S. A.

H. W. DARBY, M. D.
Medical Director

Date ..... April ... 1932

REPORT OF Mrs. [illegible]

1. COLOR straw

Normally varies from pale yellow to reddish yellow. Deeper color usually indicates that the kidneys are over-charged with substances that are irritating them.

2. SEDIMENT cloudy

Normal urine is clear, but may be cloudy. But clear urine is not always normal. Chemical analysis may show sugar or albumin.

3. REACTION neutral

Normal urine is somewhat acid. Diet of vegetable foods and mineral waters may make it alkaline. Diet of meat produces high acidity. If urine is retained in bladder from enlarged prostate, tumors or inflammation, it may also become alkaline. High acidity is sometimes improved by drinking more water; sometimes by eating less meat; sometimes by both.

4. SPECIFIC GRAVITY 1.014

Should be between 1.012 and 1.028, average 1.020. To maintain correct specific gravity 2½ pints should be passed every day. If above 1.028 the condition is often improved by drinking more water and reducing amount of meat eaten. If below 1.012, unless from drinking too much fluids, the kidneys may not be working properly, or nutrition may be faulty. Consult your physician if specific gravity is persistently abnormal.

5. ALBUMIN slight trace

Its persistent occurrence if casts are found indicates inflammation of the kidneys (Bright's Disease or other serious condition). Mild congestion may cause it to appear temporarily. Any appearance calls for further analysis at intervals. If persistent confine yourself to vegetable and liquid diet, eating little or no meats or whites of eggs. If this does not eliminate it promptly, consult your physician.

6. SUGAR 0

Its presence may be only temporary, and may be caused by faulty digestion. If persistent it indicates serious disease (Diabetes) and requires treatment by a physician. Any indication of sugar should be followed by regular and frequent analyses to be sure that the condition is only temporary. Elimination of all sugar and starchy foods such as candies, desserts, white bread, potatoes, etc., often cause it to disappear.

7. ACETONE 0

In diabetes an excess indicates a serious state. It may be the result of other serious diseases. This condition calls for repeated examinations at regular intervals.

8. DIACETIC ACID 0

Same as No. 7. Persistent appearance calls fo attention of physician.

9. BILE 0

Indicates disturbances of digestion, liver trouble, gallstones, tumors or inflammation of stomach or bowels.

10. BILE PIGMENTS 0

Ordinarily due to obstruction to the outflow of bile caused by inflammation in stomach and small intestines or to gallstones or to tumors pressing upon the bile ducts or to adhesions. Consult physician

11. INDICAN 0

Usually indicates absorption of intestinal poisons caused by constipation, indigestion, gas formation, and local chronic infections. Found in auto-intoxication and is often a forerunner of numerous diseases. Often caused by too much nitrogenous (albuminous) food, such as lean meats, whites of eggs, etc. Its elimination will result in an increase of physical efficiency. If indicated be careful to maintain regular daily bowel movements.

12. CASTS—HYALINE 0

May appear when kidneys are congested and disappear when congestion disappears. In men of advanced age often appear without other disease evidences and signify no serious disorder. In younger persons if they persistently appear they indicate structural changes in the kidneys.

13. EPITHELIAL CASTS 0

Indicate more extended impairment of kidneys than Hyaline casts

14. GRANULAR CASTS 0

Same as No. 13.

15. BLOOD CASTS 0

Indicate acute diffuse nephritis, acute congestion of the kidneys and renal hemorrhage.

16. FATTY CASTS 0

Are found in sub-acute and chronic inflammation of kidneys.

17. WAXY CASTS 0

Not found in any particular form of nephritis, but quite common in amyloid disease.

18. PUS CASTS 0

May indicate inflammatory change in urinary tract. May follow injury or former inflammation. Further analyses should be had to prevent continuance until it results in serious diseases of prostate gland, bladder or kidneys, and much distress later on. Consult your physician.

19. CYLINDROIDS 0

They are mucus or "false" casts having no significance other than to indicate an irritation due to exposure, faulty diet or over-exercise which should be avoided. If caused by old inflammatory conditions in the urethra or bladder you should consult a physician.

20. MUCUS 0

A trace may be present in health, especially in women. Often caused by acute or chronic catarrhal conditions, and if in abundance indicates inflammation or irritation, with significance similar to cylindroids.

21. URIC ACID CRYSTALS 0

Often found in rheumatism and may cause stones in the kidney or bladder. Frequently result from over-indulgence in animal food. They may disappear with drinking more water and eating less meat.

22. AMORPHOUS URATES 0

Some appear in health. White urates in excess usually occur in concentrated urine and may be eliminated by use of more water. Pink urates suggest functional disturbance of the liver, and require attention of a physician.

23. PHOSPHATE CRYSTALS 0

May appear in small amounts in health. Phosphate crystals may cause stone in kidney or bladder. If excessive indicate loss of nerve power or mental strain or nutritive disturbances. An excess is sometimes due to predominating vegetable diet.

24. CALCIUM OXALETES CRYSTALS 0

May indicate nutritive disturbances or fault in diet, and are found in diabetes. They may appear after eating fruits and vegetables rich in oxalic acid or from over-eating. Repeated analyses will show if this is the cause. Any crystalline formation indicates faulty diet or digestion and nutrition and if cause is not removed may lead to serious troubles.

25. EPITHELIAL CELLS few

Normally a few squamous cells may be present. These cells usually accompany inflammatory conditions of the genito-urinary tract and if in excess require the attention of your physician.

26. LEUCOCYTES (CELLS) few

These are white blood cells; the defenders of repairmen of the body, and appear when the bladder, kidneys or ureter are inflamed or injured by disease. Their presence in small amount are found in health at times.

27. PUS CELLS 0

Never present in perfect health. See No. 18, Pus Casts.
NOTE: In female specimens secretions from vagina may contaminate the urine with any of the cells described in 25, 26 and 27.

28. SPERMATOZOA 0

Due to presence of seminal fluid. Ignored if other tests are normal.

29. RED BLOOD CELLS 0

Its presence indicates inflammation in urinary tract, tuberculosis, stone in kidney or bladder, or tumor. It may appear normally in female specimens.

This report is merely an analysis, and is intended to warn you when your health is in danger or a physician is needed.

SIGNED H. W. Darby (Medical Director) M. D.

Facsimile (reduced) of urinalysis report, the first seventeen items appearing on the front and the remaining items on the back of the report.

Another specimen of urine contained a faint trace of albumin, a relatively large proportion of leukocytes, and many bacteria. The Universal Research Laboratories stated that they found the condition "very encouraging." They reported no albumin, and only a few leukocytes and epithelial cells.

Another urine which was sent to the Universal Research Laboratories contained a faint trace of albumin and a considerable amount of pus and bacteria. Here too the Universal laboratories state that the "report is very encouraging." The laboratories found no albumin, a slight trace of indican and no epithelial cells or leukocytes.

In no case did the results reported by the Universal Research Laboratories for Montgomery Ward & Co. agree with the character of the urine sent.

The name of the medical director of the laboratories, H. W. Darby, has long been in the files of the Bureau of Investigation of the American Medical Association. Concerning his activities, the Bureau has furnished the following memorandum:

According to the records of the Bureau, H. W. Darby was born in 1876. The Bureau has nothing to show that he was ever graduated by a reputable medical college. It is, however, true that he is licensed to practice medicine in Minnesota, the license having been issued in 1898. The Bureau has in its files a pamphlet put out by the exploiters of a nostrum for diabetes, known as "Expurgo" and later called "Sanol." One of the testimonials in this booklet praising the stuff is by Darby. Darby was the physician in charge of the "Loring Park Sanatorium" of Minneapolis. This sanatorium was run by a man who was exploiting an alleged cure for diabetes called "Jamun Compound," which apparently was used in the sanatorium. The Minneapolis newspapers for April and May, 1918, recorded the indictment of Darby for selling habit-forming drugs. According to one paper, during 1917 Darby purchased 119 ounces of cocaine, 113 ounces of morphine and 11,700 heroin tablets. This is the man selected by Montgomery Ward & Co. to supply customers with reports in matters which may critically concern both health and life.

It would seem that a large mail-order house, before entering into this type of promotional scheme, would endeavor to obtain some information as to the standing of the laboratories concerned. The chemical laboratories of Montgomery Ward & Co. located at the home office frequently have called on the American Medical Association for information in regard to quack remedies which have been offered for inclusion in its mail-order catalogue. The plea cannot be made, therefore, that the company was unaware of the work of the American Medical Association and its extensive data concerning medical institutions and products.

The Formation of Erythrocytes.—Red marrow is confined to the cancellous bones and the ends of the long bones. The vascular system of the bone marrow is closed and the whole of the erythron, including the most primitive cells from which it arises, is intravascular. The capillaries of the marrow not only serve to maintain the circulation but they also have a dual function in erythrolysis and erythrogenesis. The endothelial cells of the sinuses are phagocytic like those of the liver and spleen. Connecting the sinuses are the intersinusoidal capillaries in which the red cells are formed intravascularly, in contrast to the white cells, which arise outside the vessels and migrate into the circulation when they mature. The endothelial cells lining the intersinusoidal capillaries give rise to the earliest megaloblasts by mitosis into the lumen. Successive divisions of the megaloblasts produce the erythroblasts, normoblasts, reticulocytes, and thus the red cells of the circulating blood. Developing within the capillary, the red blood cells dilate the lumen and stretch the wall, but the capillary does not normally open to the circulation until the red cells are mature. This is because the membrane of the young cells is sticky and they adhere to one another. The stickiness persists till about the time when the reticular substance disappears from the cell. The plasma then filters between them, and they are swept into circulation.—Witts, L. J.: The Pathology and Treatment of Anemia, *Lancet* **1**:495 (March 5) 1932.

Committee on Foods

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

MEAD'S POWDERED WHOLE MILK

Manufacturer.—Mead Johnson and Company, Evansville, Ind.

Description.—A powdered spray-dried whole milk hermetically sealed in cans in an atmosphere of nitrogen.

Manufacture.—The milk used is from tuberculin tested cows and is collected under carefully supervised conditions. Each delivery is tested for bacteria, fat, odor, acidity and sediment and stored in glass enameled tanks at 10 C. The fat content is adjusted to 3.5 per cent. The modified milk is partially evaporated, homogenized by being forced through small apertures under high pressure, conveyed to a closed tank from which the air is almost completely exhausted, and heated to 110 C. for one and one-half minutes by steam under pressure (Grindrod process). The heating in the practical absence of air is to minimize destruction of vitamins. The concentrated milk is sprayed under high pressure into a current of cleaned, washed, heated air in a drying chamber. The milk solids are collected from the bottom of the chamber, examined to determine whether it fulfils standard requirements, and packed in an atmosphere of nitrogen in hermetically sealed tins.

Analysis (submitted by manufacturer).—

	per cent
Moisture	1.5
Ash	6.0
Fat	28.0
Protein (N × 6.38)	26.8
Lactose (by difference)	37.7
Calcium (Ca)	0.88
Phosphorus (P)	0.72
Magnesium (Mg)	0.08
Sodium (Na)	0.44
Potassium (K)	1.16
Sulphur (S)	0.05
Chlorine (Cl)	0.77
Iron (Fe)	0.0012
Copper (Cu)	0.0005
(Analysis of normal dilution, 1 oz. + 7 oz. water)	
Ash	0.8
Fat	3.5
Protein (N × 6.38)	3.4
Lactose	4.7

Calories.—5.1 per gram; 145 per ounce.

Micro-Organisms.—The manufacturer guarantees the absence of pathogenic organisms. The bacteria counts are normally below 1,000 per gram.

Vitamins.—The vitamins A and B (complex) of the milk used are practically unchanged; vitamin C is slightly affected.

Claims of Manufacturer.—The powdered milk mixed with seven parts by weight of water is practically equivalent to standard milk and is suitable for infant feeding.

"220 BREAD" (LYNCHBURG STEAM BAKERY)

Manufacturer.—Lynchburg Steam Bakery, Inc., Lynchburg, Va.

Description.—A white bread made by the sponge dough method.

Manufacture.—The sponge dough ingredients, 70 per cent short patent flour of northwest wheat, water, yeast and a yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate, are mixed in a high speed mixer. The sponge dough is fermented for from four to five hours, after which are added flour, water, salt, lard and sweetened condensed skim milk to make the completed dough, which is cut into pieces of desired weight. The pieces are fermented for a short time, molded into loaf form, panned, further fermented, baked for from thirty to thirty-five minutes, cooled, and wrapped in wax-paper.

The factory, equipment and storage rooms are kept in strictly sanitary condition.

Analysis (submitted by manufacturer).—

	per cent
Moisture (entire loaf)	37.3
Ash	1.8
Fat (A. O. A. C.; method 1)	3.0
Protein (N × 6.25)	10.3
Crude fiber	0.6
Carbohydrates other than crude fiber (by difference)	47.0

Calories.—2.6 per gram; 73 per ounce.

Claims of Manufacturer.—A bread of good quality.

ROCKWOOD'S ROCK-CO BRAND PURE COCOA (FLAVORED)

Manufacturer.—Rockwood and Company, Brooklyn.

Description.—Cocoa flavored with vanillin.

Manufacture.—The manufacture is essentially that described for "Rockwood's Pure Cocoa. A Blend of Natural and Dutch Process Cocoas" (THE JOURNAL, April 2, 1932, p. 1160) except that no Dutch process cocoa is used.

Analysis (submitted by manufacturer).—

	per cent	(moisture and fat free basis)
Moisture	4.9	...
Total ash	5.8	6.9
Ash insoluble in acid	0.09	0.11
Fat	11.4	...
Protein (noncaffeine and nontheobromine N × 6.25)	20.1	...
Total nitrogen	3.9	...
Crude fiber	5.3	6.3
Carbohydrates other than crude fiber (by difference)	50.3	...
Theobromine (Wadsworth method)	2.0	...
Caffeine (Wadsworth method)	0.2	...
Alkalinity of the soluble ash (cc. of normal acid required to neutralize soluble ash of 100 Gm. of cocoa)	26 cc.	31 cc.
Alkalinity of the insoluble ash (cc. of normal acid required to neutralize insoluble ash of 100 Gm. cocoa)	48 cc.	57 cc.

Calories.—3.8 per gram; 108 per ounce.

Claims of Manufacturer.—A low fat cocoa with less fat than standard "breakfast cocoa"; for all table uses of cocoa.

KELLOGG'S KAFFEE HAG COFFEE

(Almost completely decaffeinated)

Manufacturer.—Kellogg Company, Battle Creek, Mich.

Description.—A blend of selected roasted coffee from which almost all the caffeine has been removed.

Manufacture.—Selected green coffees from South and Central America, after being thoroughly cleaned and freed from foreign materials, are extracted with a selective solvent for caffeine. The extracted coffee "is steam distilled" to remove any remaining trace of extractive. Steam is removed from the coffee by a current of warm dry air. Every batch of extracted coffee is tested for caffeine to assure approximately 97 per cent removal.

Tested coffees are blended to secure the desired flavor and to assure conformity with the required limits for caffeine content. The blends are roasted and packed under reduced pressure in hermetically sealed tins.

Analysis (submitted by manufacturer).—

	per cent
Moisture	2.0
Ash	4.6
Fat (ether extract)	13.3
Protein (N × 6.25)	12.0
Crude fiber	21.3
Carbohydrates other than crude fiber (by difference)	46.8
Caffeine, less than	0.04

Calories.—3.5 per gram; 102 per ounce.

Claims of Manufacturer.—Kaffee Hag Coffee is coffee with almost all the caffeine removed. It retains the delicious coffee flavor and may be drunk without causing sleeplessness or nerve excitation. It may be used when unextracted coffee has been forbidden because of caffeine effect.

DEERWOOD BRAND GOLDEN CORN SYRUP

Packer.—D. B. Scully Syrup Company, Chicago.

Distributor.—Copps Company, Stevens Point, Wis.

Description.—A table syrup; a corn syrup flavored with refiners' syrup.

Manufacture, Analysis, Calories, Claims of Manufacturer.—See these sections for Banner Blue Corn Syrup with Cane Flavor (THE JOURNAL, March 5, 1932, p. 817).

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - Seven dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 30, 1932

CHILD HEALTH DAY

In few, if any, periods in our national medical history has more concerted effort been directed toward child welfare in its varied aspects. Every phase of the child's life is receiving scientific investigation and attention. Specialists have developed in every field of infantile and juvenile activity. Numerous organizations have been created to study the status of the health and well being of the children of the United States and its possessions, to report what is being done, and to recommend what ought to be done and how to do it.

This is admittedly a large task, and it has been relegated for the most part to experts who serve without compensation and make their efforts a "labor of love." In a recent address, Dr. Ray Lyman Wilbur said that there are 45,000,000 growing children in this country. They represent more different racial strains than make up the body of any other nation. They have widely different backgrounds. To get a composite picture of this complex American child, to find out how he rates physically, mentally and morally, what our rapidly changing civilization is doing to make or mar him, to determine where our social, educational and governmental machinery is at fault in training him to his utmost capacities, and where it may be strengthened, is a challenging task.

The scientific studies of the child have been published in many medical periodicals and in many special publications which reach parents and teachers in the public schools. May first, which has been set aside by presidential proclamation as Child Health Day, should serve to keep awake the great interest in the problems and possibilities of child welfare and to help promote those movements, including public health measures, that will serve to attain the objectives of their sponsors. Fact finding is not enough. There must be concerted effort to put well known prophylactic procedures into effect, so that prepared minds in wholesome bodies will be the characteristics of the rising generation.

The demands of childhood are not limited to the field of medical service, including growth and development, prenatal management and maternal care. The child is involved in public health problems such as communicable disease control, in the technical aspects of education and training, and in those complicated details that relate to the physically, socially and mentally handicapped. It has been remarked that every child is now our child, because so many artificial conditions have been injected into our industrial civilization that the old normal relationships of mother and child, child and family, family and neighborhood, have been changed.

An illustration of the immediate opportunities for more forceful medical leadership is apparent in the results of a recent study. A cross-section survey of the country has shown the extent to which preventive medical procedures are reaching children under 6 years of age.[1] In this group only 22 per cent are vaccinated against smallpox in the urban areas and only 7 per cent in rural areas. When we realize, says the writer, the peculiar susceptibility to smallpox of children under 6 and that for the last ten years we have had a yearly average of 55,000 cases of smallpox, we cannot fail to grasp the truth of this conclusion. What is true of smallpox is true also of diphtheria. We have available procedures which if universally applied would eliminate both of these diseases within relatively few years. Lack of progress in health conservation not infrequently is due to the unfortunate tendency to neglect well established and proved methods. That is why the Child Health Day proclamation properly brings the perennial reminder of "the fundamental necessity of unremitting effort for the protection and development of the health of the nation's children."

1. United States Daily, section II, Washington, D. C., April 6, 1931, "Foreword."

NONPROTEIN ALLERGY

For some years, immunologists have been puzzled by clinical reports of what are apparently true anaphylactic syndromes caused by the inhalation of coal-tar gases and by the alleged production of similar anaphylaxes in experimental animals by the administration of bacterial distillates or other volatile or nonvolatile nonantigenic crystalloids. To harmonize such observations with the current theories of protein sensitivity, allergists have generally assumed that these crystalloid sensitivities are either pseudo-anaphylactic in nature, i. e., phenomena outside the field of true protein anaphylaxis, or are secondary allergies to crystalloid-denatured body proteins. Specific anticrystalloid therapy would not seem practicable under either interpretation. A quite different clinical feasibility, however, is suggested by the recently discovered but now well confirmed "Landsteiner phenomenon,"[1] the beginning of a real science of "crystalloid immunity."

1. Landsteiner, K., and van der Scheer, J.: J. Exper. Med. 48: 315 (Sept.) 1928; 54: 295 (Sept.) 1931.

Stripped of chemical hieroglyphics, Landsteiner and his co-workers found that, while numerous crystalloids are in themselves apparently nonantigenic, they do acquire demonstrable specific antigenic powers when conjugated with protein "carriers." The resulting protein conjugate, injected into experimental animals, leads to the development of what may be conveniently pictured as a "duplex antiserum"; that is, a serum combining both antiprotein and anticrystalloid functions. By means of the anticrystalloid fraction (or function) the crystalloid can be detected and identified, either in its free state or when combined with a protein. In either case the identification is made with the same ease and certainty with which Bacillus typhosus, for example, can be differentiated from the colon bacillus.

The basic theory of these phenomena is still in dispute. From the practical point of view, however, the crystalloid united with its protein "carrier" acts as a "unit immunologic determinant," or "unit antigenic characteristic." Under this metaphor, "crystalloid allergies" are sensitivities to the conjugated "crystalloid determinants" rather than to denatured protein "carrier." This radically new interpretation of crystalloid sensitivity suggests a working hypothesis for practical antiallergic research, with possible applications to crystalloid bacterial toxins, and gastro-intestinal putrefactive "subantigens." The technic is also conceivably applicable to crystalloid pharmacodynamic agents.

PUBLIC HEALTH IN NEW YORK STATE

On May 1, 1930, the governor of New York appointed a special commission to survey health conditions in that state and to offer recommendations for improvement. A preliminary report appeared on Feb. 16, 1931, and the final report,[1] suitably bound for permanent record, has just been made available. The commission was headed by Dr. Livingston Farrand, and its secretary was the health commissioner of the state, Dr. Thomas Parran, Jr. Every reputable medical and public health agency in the state cooperated in the development of the material, organized medicine being represented by the Medical Society of the State of New York. Among the striking observations is the evidence of great inequalities within the same state not only as to health conditions in general but particularly in reference to the control of certain diseases. Tuberculosis receives vast amounts of attention in comparison to what is done for syphilis and cancer. Some municipalities have been able to stamp out diphtheria entirely, whereas in others the disease continues to occur and even to increase in its incidence. Infant mortality varies greatly from the worst to the best.

In his foreword to the report, Governor Franklin D. Roosevelt indicates his approval of the results of demonstrations in Cattaraugus County, Syracuse and the Bellevue-Yorkville district of New York City. He emphasizes particularly the inadequacy of town and village boards of health, suitable in 1850, to meet the conditions of 1932. The commission urges the creation of 57 county boards of health to replace the present 1,158 town and village boards. Of especial significance is the opinion of the commission that health functions which local governments can be equipped to perform satisfactorily for themselves should not remain functions of the state. It is recognized that a central control with power might be exceedingly efficient, exactly as is the control of highways by a state department of public works. However, as Governor Roosevelt emphasizes, roads have a single, simple, impersonal function, whereas health service has multiple intimately personal functions. Governor Roosevelt would reserve as the ultimate functions of the state only the maintenance of adequate standards, financial assistance for rural health, and such duties as the hospitalization of mental diseases, the general supervision of public water supplies and the registration of births and deaths. Those functions are so technical, so broad in scope, or so costly as to be unsuitable for satisfactory local administration.

Special attention is also given to the necessity for coordination of various health activities under a single head or through interdepartmental action. Public health education, child health and protection, state-wide sanitary problems, the improvement of milk supplies, industrial hygiene and the prevention of accidents are projects that may affect many different departments of the government.

The governor's consideration of the report of his commission concludes with special emphasis on the necessity for public health education and with particular attention to the mental hygiene program. Mental disease is becoming increasingly a problem of great importance. The New York State government maintains 26 institutions, with more than 50,000 patients, and a program is planned for the future to take care of many additional patients. Obviously, local communities cannot well undertake this function, at least under circumstances existing at present; but a campaign of education and study might well serve as a preventive factor in diminishing as much as possible the increasing burden of mentally defective persons on the state.

Whereas the foreword of Governor Roosevelt to this exceedingly important volume outlines fully the scope of the considerations, the individual chapters constitute a textbook of public health. Nearly a hundred people participated in the work of this commission, and the views of these experts, as well as of all those associated with the White House Conference on Child Health, have been surveyed in developing this volume. The report makes no attempt to handle the question of the

1. Public Health in New York State, Report of the New York State Health Commission, 1932.

cost of medical care, awaiting instead the report of the committee on that subject, which expects shortly to announce the report of its five year study.

Rarely is there opportunity in any community for such a searching and competent survey as has been made in New York State. The results in the form of recommendations to individual communities, recommendations for legislative action and similar topics are bound to have a far-reaching effect.

Current Comment

THE MENACE OF THE CAT

Each year the Noise Abatement Commission of New York City receives more than 2,000 letters complaining about the nightly howling of cats. The director of the Animal Rescue League of Boston recently stated that his society handled in that city alone 5,000 cats a month. A Connecticut trapper in the course of his winter's work caught thirty errant cats in his traps that were set for fur-bearing animals. Millions of domestic cats gone wild are said to inhabit Australia and are rapidly destroying the bird life of that continent. Game keepers in different states agree that in the last twenty-five years the errant cat has become the worst of all enemies to birds. British Columbia reports that in the Far North the valuable sooty grouse has been almost exterminated by cats. On Martha's Vineyard, they have been partly responsible for the extinction of the heath hen and on islands along the coast have annihilated the breeding colonies of gulls and of terns. In the state of Wisconsin, where the raising of pheasants was an important industry, the cat was found to be the most destructive depredator, and in that state the cat has been outlawed, except under such control as is prescribed by the legislature. There are probably few persons living who have not at some time seen a cat spring upon some helpless and harmless bird. The cat is not always the innocent purring creature that she seems to be when lying before the fireside or sleeping on the sofa. Indeed, the intimate contact with people which cats enjoy is sometimes a menace to human life, for they may carry in their bodies or in their fur the causative agents of human disease. Rat bite fever has in several instances followed the bite of a cat. A dog tapeworm and the hog roundworm are harbored by cats. Brucella melitensis, the cause of undulant fever, has been isolated from the mesentery glands of infected cats. Cats are the hosts of several animal parasites, some of which are transferable to man. The liver fluke is a natural inhabitant of the cat. Since the female errant cat, which produces several litters a year, is the chief source of supply, Dr. Robert T. Morris has proposed a tax of $5 on female cats in order to limit, in a humane way, the unwanted and unnecessary army of cats and thus to prevent the destruction of birds which may be laid directly to cats. There has been a tax on dogs for many years. Why not tax cats?

MAIL ORDER URINE TESTS

Elsewhere in this issue appears a report from the Chemical Laboratory of the American Medical Association relative to a urine examining service conducted by Montgomery Ward and Company. Since the time when the Life Extension Institute first proposed by the examination of four specimens of urine each year to indicate to persons who submitted the specimens exact knowledge relative to their state of health, various concerns have endeavored to exploit this plan commercially. From time to time THE JOURNAL has published information relative to such agencies; many of them have come and gone during the last ten years. It is, however, a new departure for a mail order organization of the scope of Montgomery Ward and Company to undertake such a service, and it is sad indeed that the service once undertaken should be so unreliable as is the service they conduct. Every physician knows that a mere examination of the urine without a physical examination and without a careful study of the patient in person may be more misleading than valuable, so that even if the urine service were perfect, its utility would still be problematic. When, however, the service is of the character that this one seems to have, it becomes a menace to the user. It is difficult to surmise why Montgomery Ward and Company embarked on this jaunt into the field of medical practice. Since the article on the Universal Research Laboratories was prepared, evidence has become available that the company is actually owned by Warner's Renowned Remedies, a firm which manufactures a goiter remedy, and which deals largely with department stores and mail order houses. Certainly the ownership of the firm cannot improve its standing with the Chicago mail order house, nor can it be considered as in any way gilding this lily. It is to be hoped that this demonstration of the failure of the corporation to judge what is sound in the medical field will cause it once and for all to confine its business efforts to the sale of materials and goods rather than of medical service.

ELLIPTIC ERYTHROCYTES

The red blood corpuscles of man are biconcave, circular disks about 7.7 microns in diameter, and there is a striking uniformity in their shape. However, there are on record instances in which a considerable proportion of the erythrocytes are elliptic in outline. Fifty cases in addition to two of their own have recently been considered by Terry, Hollingsworth and Eugenio [1] in a discussion of this unusual anomaly. The condition in these recorded instances is not correlated with age, color, sex or blood groupings. There appears to be no connection between the presence of oval red cells in the circulation and a disease condition, nor has it been shown that medical treatments of a wide variety have changed the shape of the erythrocytes. The anomaly is hereditary and both sexes can transmit it, though there may be a generation in which it does not appear. As nearly as could be determined from studies on a living patient, it was concluded that the red corpuscles

1. Terry, M. C.; Hollingsworth, E. W., and Eugenio, Vicente: Elliptical Human Erythrocytes, Arch. Path. 13: 193 (Feb.) 1932.

circulating in the blood probably were elliptic and that their shape was not the result of laboratory treatment. In fact, the more carefully the blood was manipulated, the greater was the proportion of abnormal forms. It also has been observed that elliptic erythrocytes maintain their peculiar shape for some time after being introduced into the circulation of a recipient. That the oval cells do not depend on some property inherent in the plasma was shown by the failure of normal erythrocytes to alter in shape when put into the plasma from abnormal blood of the same type. When wet preparations were examined after various intervals, it was observed that after seventy-two hours many of the originally elliptic cells were circular in outline. This change was inhibited by cold. It was also shown that the oval erythrocytes were heavier and more resistant to hypotonic salt solutions than were the normal cells present in the same blood. The information available at present concerning elliptic erythrocytes fails to point to a practical significance of this condition; it would appear, however, that further study of this anomaly in man or of analogous variations in other animals might yield information of considerable scientific importance, in view of the current renewal of interest in hematology.

Association News

THE NEW ORLEANS SESSION

Annual Golf Tournament

Members of the American Medical Golfing Association are invited to play in the Eighteenth Annual Tournament in New Orleans, May 9. Entries for the tournament should be sent, up to May 1, to the Executive Secretary's Office, 4421 Woodward Avenue, Detroit, and after that time to Dr. J. P. O'Kelley, chairman of the Local Committee, at New Orleans. The total charge for active members of the Golfing Association is $5.50, which includes thirty-six holes of golf, the dinner and the prizes. The tournament at New Orleans promises to be contested by a large number of entrants. The match will be played over the New Orleans Country Club course, which is only a short distance from the downtown hotels. Following the tournament there will be a banquet and the distribution of about fifty trophies and prizes. In the annual tournament held during the meeting in Philadelphia last year, twenty-four states were represented. Those desiring may play a practice round before the tournament simply by presenting their membership card of the Association and paying the green fee of $2.

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts on Monday and Wednesday from 2:25 to 2:30 p. m. over Station WBBM (770 kilocycles, or 389.4 meters), and on Friday from 1:25 to 1:30 p. m. over WBBM and other stations of the Columbia Broadcasting System.

The program for the week is as follows:

May 2. Conservation of Hearing.
May 4. A Monument to the Dog.
May 6. Carnations, White and Red.

There is also a fifteen minute health talk sponsored by the Association on Saturday from 11:15 to 11:30 a. m. over Station WBBM, Chicago.

The program for the week is as follows:

May 7. Lip-Reading.

This schedule is based on Chicago Daylight Saving Time, one hour faster than Central Standard Time.

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Eighth Annual Meeting, held in Chicago, Feb. 15 and 16, 1932

(Continued from page 1481)

DR. HAROLD L. RYPINS, Albany, N. Y., in the Chair

JOINT SESSION OF COUNCIL AND THE FEDERATION OF STATE MEDICAL BOARDS

FEBRUARY 15—AFTERNOON

REGULATION OF MEDICAL SPECIALISTS

Tendencies Toward Specialization

DR. H. G. WEISKOTTEN, Syracuse, N. Y.: To judge the tendencies in practice of medical college graduates of a given year, it is necessary to wait until a sufficient time has elapsed for these graduates to have become established in practice. Hence, the most recent data I can present at this time deals with the graduates of 1925.

In 1926 I studied, through questionnaires, the tendencies in medical practice shown by the graduates of fifty-seven medical colleges in the United States for the years 1915 and 1920.

Under a grant from the Josiah Macy, Jr., Foundation, I have been able during the past few months to make a comparable study of the graduates of sixty-nine medical colleges of the United States and Canada for the year 1925.

The names and addresses of the graduates were secured from the medical colleges, and all addresses were checked with the 1931 American Medical Directory. More than 75 per cent of the graduates filled out the questionnaires and returned them, and there is every reason to believe that the data are dependable.

Although this study does not indicate an increased tendency toward specialization on the part of the 1925 graduates as compared with the 1920 graduates, it does emphasize the fact that more than one third of our medical college graduates actually limit their practice to a specialty within six years after graduation, and practically three fourths of them plan eventually on such limitation.

My purpose in presenting these data is to emphasize the enormous field in graduate medical education involved in the adequate training of men for the practice of the specialties. Many of the physicians today assuming the responsibilities of the specialist have not had an adequate, well organized and systematic graduate training. In spite of the outstanding developments that have occurred in a few institutions, there has been no general recognition as to what should be involved in such adequate training.

However, in June, 1923, the House of Delegates of the American Medical Association laid down certain fundamental principles regarding courses leading to the specialties. Certain clarification of the problem has also resulted from the establishment of standards for admission to or recognition by various national groups of specialists. At its last annual meeting, the Association of American Medical Colleges adopted recommendations as to the basic fundamental requirements for preparation for the practice of the specialties.

From these various sources there is now available a sufficiently clear definition of the fundamental problems involved in graduate medical education to warrant a survey by the universities of the country as to their resources and facilities for development in this field.

If the results of my studies are dependable, about 70 per cent of the graduates of each year will eventually limit their practice to a specialty. There are each year at least 5,000 graduates from American and Canadian medical colleges; 3,500 of these should then receive graduate training at some time after graduation. Thus, considering the graduates of the various years, there should be a total of 3,500 physicians each year beginning their graduate training. If one assumes that the period of such training would vary from two to four or more years, there should be adequate provision at all times for at least 8,000 to 10,000 graduates in training for the specialties.

In other words, there can be no question that there actually exists today an enormous demand for the development of high grade graduate medical education.

The Council on Medical Education and Hospitals of the American Medical Association and various hospital standardizing agencies are making definite progress in preparing the field for graduate medical training. Is it not sound to look to the development, organization and utilization of existing laboratory and clinical facilities under the supervision of responsible educational institutions? If this could be accomplished it would mean definite progress in solving the educational problems involved in connection with specialization in medicine.

The Function of the Graduate School in the Training of Specialists

DR. LOUIS B. WILSON, Rochester, Minn.: Medical schools, which for the most part avowedly confine their activities to training men and women to become general practitioners of medicine, are beginning to recognize their further responsibilities in the more extensive training of physicians in the several clinical specialties.

What are the facilities of the medical school for advanced study in the special phases of anatomy, physiology, physiologic chemistry and pathology which underlie diagnosis and treatment in the clinical specialty chosen? Every good medical school can offer excellent facilities for advanced study in some one or more of these fields. This means opportunity for individual advanced work under faculty supervision. It also means opportunity for conducting research work on some problem related to one or more of these fields. If a specialist is to be more than a technician, he needs to know more of certain phases of each of these fields than it is possible to learn in any undergraduate medical course. If he hopes to advance the science of his chosen field, he must become familiar with the principles and methods of research. The medical school can and should supply him with opportunities for both these purposes.

The clinical department in which the graduate is doing his major work will be found to contain men capable of supervising his clinical work. In some instances no one man in the department may be the equal of some outstanding practitioner in the same field in the same community who is not connected with the university department, but on the other hand the loss of the personal inspiration of this single outstanding man may be compensated for by the variety of criticisms received from the several men within the university faculty. It is important that some one in the clinical department by example should inspire the graduate student to engage intelligently in clinical research.

Proper survey of clinical material at the command of the medical school almost always reveals a considerable amount, the study and care of which is not properly a function of the student at the undergraduate level or of the intern preparing for general practice. I suspect that much of the deplorable tendency of so many medical graduates to rush early into the practice of medical specialties results from their enforced contacts as clerks and interns with clinical material which should be reserved for the training of specialists. Much also of the overcrowding of the undergraduate medical curriculum results from the cosmic urge of the specialists in the medical faculty to tell all they know, a desire which might be less harmfully if not more profitably granted if their efforts were directed toward graduate students of clinical specialties.

This suggested readjustment of clinical facilities in most schools should not necessitate increased facilities, though in many instances facilities might be increased by eliminating internships in hospitals in which the clinical material available is more suitable for the training of specialists than for the training of general practitioners. There are many such institutions in which the facilities have never been adequately surveyed and applied to those purposes to which they are best suited.

If, then, medical schools possess such a preponderance of desirable facilities for graduate training in the specialties, why have not more of them offered their resources for such training? Principally, I believe, because of fear of increased teaching burdens and increased expense for equipment and faculty.

A great part of both these objections comes from failure to break away from old traditions of teaching. School authorities have difficulty in grasping the fact that classes, formal lectures and routine laboratory instruction are entirely foreign to graduate work. The only additional equipment necessary is individual laboratory and examining room space. Much of this already exists and is occupied by instructors whose aspirations are only for faculty advancement and who may well be replaced by graduate students. Necessary additions to the faculty consist chiefly of men of inspiration to replace those capable only of dogmatic instruction of undergraduates.

I am convinced that if the practice of clinical specialties is to become more of a profession and less of an occupation, medical schools must recognize and accept their responsibilities in providing adequate opportunities for a small number of carefully selected medical graduates to fit themselves thoroughly for the practice of special clinical medicine.

The Control of Medical Specialties

DR. WILLIAM H. WILDER, Chicago: How can our profession control the condition of medical specialism, which is a natural outgrowth of higher medical progress? I think it can be strongly influenced, if not controlled, first, by the establishment of definite standards of preparation. Our ophthalmic board feels that for the present a requirement should be made of one year of special clinical and laboratory instruction, followed by two years more of clinical work, part of which should be done in a well organized special clinic, and an equal part in private practice. With such preparation, a person should be able to demonstrate to a competent special board of examiners by a practical, oral and written examination that he is fitted to practice ophthalmology. Of course, it is assumed that in all specialties the graduate student will have had the four years of undergraduate work plus the clinical year that leads to the degree of Doctor in Medicine.

We should encourage the development of centers of instruction for the specialties in university medical schools, in special hospitals and in special clinics, where applicants may have not only facilities for good laboratory and clinical instruction but also opportunities to serve as interns, resident specialists and clinical assistants for prescribed periods.

We should endeavor to promote standardization of instructional programs and clinical duties in the various institutions so that the students engaged therein would be prepared in the various subjects covered by the examining boards and would be able to demonstrate their fitness for their special work.

I think there should be a certain measure of control by some central authority that would study the operation of existing agencies and, if such were found satisfactory, would help promote their influence by giving them its stamp of approval.

I do not think that this matter of specialism in medicine should be turned over to the state for examination and licensure, for such a course would be fraught with all the dangers and pitfalls that impede the progress of our national and state governments, already hampered and cursed by too much politics.

It occurs to me that the American Medical Association could do much to encourage the growth and influence of these special boards of examiners by listing more conspicuously in its directory the names of those who have been found competent specialists and who have received the certificate of such special boards. The Association could well afford to present in its directory complete lists of certificated specialists, geographically arranged and easy of reference. Not only would such a list be convenient for practitioners who have occasion to refer patients to reliable specialists in different parts of the country, but it would be a stimulus to many specialists to acquire fitness in their work that would make them eligible for such a list.

Certification of Obstetric and Gynecologic Specialists

DR. FRED L. ADAIR, Chicago: The American Board of Obstetrics and Gynecology was initiated in 1927, and it was incorporated and formally organized in 1930. This resulted from the determined effort of members of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the American Gynecological Society, and the Section on Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association to improve the practice of obstetrics and gynecology. The announced purposes of this board are:

First, to elevate the standards and advance the cause of obstetrics and gynecology.

Second, to determine the competence of specialists in obstetrics and gynecology.

Third, to grant and issue certificates or other evidence of special knowledge in the field of obstetrics and gynecology to voluntary applicants and candidates therefor.

Fourth, to arrange, control and conduct examinations to test the qualifications of voluntary candidates.

Fifth, to serve the public, hospitals and the medical schools by preparing lists of practitioners who shall have been certified by the board. These activities proceed from the certificate of incorporation in which it is stated that the nature of the business and the objects or purposes proposed to be transacted, promoted and carried on by it are as follows:

To encourage the study, improve the practice and advance the cause of obstetrics and gynecology, subjects which should be inseparably interwoven; and to grant and to issue to physicians duly licensed by law, certificates or other equivalent recognition of special knowledge in obstetrics and gynecology.

It is well understood that there are no degrees, licenses or legal privileges granted by this board. The candidates for certification voluntarily accept the standards set by the board and agree to accept its decisions as to whether or not a certificate shall be granted to the applicant.

Such certificates can carry no special privilege but should be evidence that the holder has at least fulfilled certain minimal requirements deemed essential for recognition as a qualified specialist in obstetrics and gynecology.

It is hoped that such certificates will be looked on by the medical profession, hospital organizations and the public as evidence that the diplomates have at least fulfilled the minimum requirements of the board and that each one has its sanction as being a man who has had real training in his special field and that he has passed his examinations and other tests of professional fitness so far as the board, acting in good faith, could determine.

Each applicant (*a*) must establish in a manner satisfactory to the board of directors that he is a physician duly licensed by law to practice medicine, that he is of high ethical and professional standing, and that he has received adequate training in obstetrics and gynecology as a specialty; (*b*) must have had conferred on him a degree in medicine by an institution of learning satisfactory to the board of directors; (*c*) must present himself personally to one of the examiners whose duty it shall be to investigate the applicant's credentials and make a survey of his character; and (*d*) must be limiting his practice to obstetrics and/or gynecology. Care of infants up to 1 year by the obstetrician, and abdominal surgery and urology in the female as well as breast surgery by the gynecologist has been broadly interpreted by the board as coming within the allowed scope of this ruling.

There was at first a founders group which exempted the applicants whose experience and attainments justified it, from the examinations. This classification has now been dropped so that all candidates must now be accepted in either one of two groups:

A. Those who have limited their practice to obstetrics and gynecology for a period of ten years or more.

Applicants who shall have qualified under group A shall be required to take and pass a practical, oral or bedside, clinical and laboratory examination, including obstetric and gynecologic pathology.

B. Those who have had three years' special training in obstetrics and gynecology satisfactory to the board of directors, included in at least five years of practice, and whose practice is now limited to obstetrics and gynecology.

Applicants who shall have qualified under group B shall be required to take and pass a written clinical and laboratory examination in obstetrics and gynecology, including obstetric and gynecologic pathology, as well as an oral, practical or bedside examination. Each such applicant will be required to submit typewritten reports on a total of fifty obstetric and/or gynecologic surgical operations performed by himself.

A fee of $50 is charged for the examination, but no subsequent dues are levied. It is provided that an applicant who fails may be reexamined without further charge after one year but within three years. A second failure means a reapplication and the payment of another fee.

At present the written examinations are given by individual examiners or assistant examiners in different sections of the country on the same day. These papers and the case histories are examined and graded by an examiner in another territory who has no personal acquaintanceship with the applicant.

The entire board meets once or twice a year, at which time all applicants must appear for their oral and practical examination and be passed on by the entire board.

DISCUSSION ON REGULATION OF MEDICAL SPECIALISTS

DR. J. S. RODMAN, Philadelphia: It is too easy to set oneself up as a specialist. The public should demand a reasonable graduate training before specialization is entered on. We have been shown two ways in which this necessary training can be certified to: (*a*) by the graduate school; (*b*) by qualified boards of examiners. There is a growing opportunity for graduate school training in this country in some of our universities. So those of us who have spent most of our lives in teaching the securing of a graduate degree make a definite appeal. However, there must be another way found to train safely the majority of those who wish to secure a specialist's training. This opportunity must be offered because the university training of graduates is expensive to the university and to the candidate as well. Such opportunity must of necessity be limited to those universities with a sufficiently large endowment to provide adequate hospital and laboratory facilities and to pay a living stipend to the candidate during the training period. Certification by admittedly qualified boards of examiners will, I believe, appeal to the majority. The work already done by such boards as are represented by Drs. Wilder and Adair is a most important factor in elevating standards in the fields which they represent. Other specialty groups will no doubt follow their example.

DR. REGINALD FITZ, Boston: I think in the good medical school today the rôle of the specialist, the fame of the specialist, and the part of the specialist in medicine is being put more and more into its proper relation to the whole subject of medicine. As a result, I think our undergraduates are being much less fascinated with the idea of being specialists than they were a few years ago. That, I think, is a sound tendency and I hope will grow up more and more. The problem of the regulation of medical specialists is fundamentally a problem in medical education rather than in devising methods of licensing or qualifying specialists after they have been trained. I hope, as time goes on, that the undergraduate schools will train more and more men to realize that being a general practitioner is about as good a thing as they can be, and less and less emphasis and appeal will be laid on the word "specialist." Also, as time goes on, since specialists are bound to come in, as Dr. Adair has shown, the training ground for these specialists will be largely by the preceptor system but also, in part, by the establishment of properly regulated, properly controlled postgraduate schools in our various universities. If that is the way the specialists' problem is worked out, in the due course of time we shall be less worried about their licensing, and the term "specialist" will mean something much more definite than it does at present.

DR. WALTER L. BIERRING, Des Moines, Iowa: The tendency toward medical specialism seems to be the natural outcome of the evolution of medical training in the last twenty-five years. Speaking for the federation, which is an association of state medical boards, I think we can find in this discussion a corollary of the changes that have gone on in the regulation of general practice. In earlier days the state boards assumed a certain supervision of the medical training. They depended a great deal on the examination for qualification to practice. Gradually the state boards, through their federation, have delegated to the college association and to the supervision of the American Medical Association the training, the methods of teaching, and are now concerned only with the determination of the fitness to practice. In a somewhat similar way I think they will assume the same attitude toward the regulation of specialized practice. The determination of qualifications will probably still be in the hands of the college association and under the supervision of the Council on Medical Education and Hospitals of the American Medical Association, representing the profession of America as a whole.

DR. WILLIAM JEPSON, Sioux City, Iowa: If we could get the various states to recognize that the specialties should be properly qualified, I believe we should have made a step in

advance. In fact, I really do believe that with the progress being made by the various specialties there will happen in connection with them what has already happened in connection with the specialty of dentistry. We all recognize dentistry as a specialty, and it is possibly the least important of all, from the standpoint of life; yet they have their special laws in practically every state, I believe. The time may be pretty close at hand when the specialists in the various states will have the same power before the state legislatures and get special legislation passed. When that is done, our federated boards can go to work and get them unified.

DR. THOMAS J. CROWE, Dallas, Texas: If we can induce the American Hospital Association and the reputable hospitals of the country to demand of men who appear in those institutions to do special work to present a certification of qualification, we shall accomplish something. If you depend on state boards or depend on special examining boards, you will have the same thing to contend with that we had all the time, the resultant product of unlicensed, unqualified, disreputable practitioners. The initiative should be taken by the colleges, and perhaps more particularly in the matter of educating the public to the necessity for education, a subject that has long been neglected. If we could induce the hospitals to help take up that work and demand of a man who presents himself to do an appendix or surgical case to present his Master of Surgery degree, it would help.

DR. FRANK R. OBER, Boston: The College of Physicians and Surgeons in New York has recently set up a three-year course leading to the degree of Master of Surgery, with relation to the specialties. It seems to me that in itself this is ineffective because it is not legal. Any requirements made by the state board, such as Dr. Jepson brought out, of course, must be legal; but there would have to be boards for each specialty. If there are ten specialties, it seems ten boards of five members each—politics and a lot of money for the taxpayers. We are here, as I understand it, to make some suggestions about the resolution that came up before the House of Delegates as to how to legalize specialists. It seems to me that the special societies will have to get together as the ophthalmologic and obstetric and gynecologic societies have done and set up special requirements in each specialty and let these be presented to the state boards, and the state board, being satisfied that these requirements are all right, will simply register the man as a specialist. It won't involve two or three days' examination by a board of five men, and it will cut down taxes.

DR. I. D. METZGER, Pittsburgh: It seems to me that these papers point the way out and the only way out; that is, the regulation must come through the educational side, not through the legal side. I think one of the means by which this educational work may be done has not been referred to this afternoon, at least, not specifically. That is the matter of controlling those who take charge of specialties in hospitals. It seems to me to be one of the most fruitful sources of control. If the standardizing agencies were to bring sufficient pressure on hospitals to demand specially trained persons to assume control of certain departments, quite a step would have been taken toward controlling the matter of specialties, because most of those who are worth while in the specialties are affiliated in one way or another with hospitals. I wouldn't want to be on a board that decides who is to do surgery, who is to do ophthalmology, who is to do eye, ear, nose and throat work, because I would not be able myself to see my way clear to administer that kind of a law in the state of Pennsylvania, and I think not in any other state in the Union. Let us not forget that one who gets into the legal line lays down specific rules which must be complied with under the police departments of the various departments.

DR. M. T. MACEACHERN, Chicago: In our hospital work, when we are organizing the staff, we want to encourage the members to have at the head of that staff a man who has some national distinction, as, for instance, a member of the American College of Physicians, a member of the National Board of Ophthalmological Surgeons, or the Board of Otolaryngology or the National Board of Obstetricians and Gynecologists, or American College of Surgeons, or something like that; that he has some distinguishing mark of that kind as leadership for the staff. There are two hospitals in the Middle West at present to which I have refused to give approval until such time as they organize the staff, putting at the head of each department a man of outstanding ability.

FEBRUARY 16—MORNING

DR. LOUIS B. WILSON, Rochester, Minn., in the Chair

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

MEDICAL EDUCATION

Student Research in the Medical School

DR. R. S. CUNNINGHAM, Nashville, Tenn.: It is my purpose to champion the idea of intensive training for selected individuals in preference to the more general form of utilizing research activities as a basic part of the medical education of every student. I would enthusiastically advocate the more general approach were it not certain that its introduction into an average medical school would necessarily occupy too much of the limited time which the staff can give, under the best of conditions, to the direction of student research. Furthermore, it is self-evident that the large amount of routine activity required to direct such a plan of required research for an entire class of students would enormously depress that enthusiasm which is so necessary for the ideal development of the few original students.

Admitting that it is wise to accept only a limited number of medical students to engage in fundamental research during their medical course, we are immediately faced with the problem of how we shall select the students to whom this opportunity should be given. I think that the choice of students for research could be limited specifically by the ideas of the individuals accepting them for work; that is to say, one factor in their selection should be their inclusion in the particular group which the individual instructor specifically considers as original.

Whether or not a given student shall be permitted to do research must be governed first of all by the opinion of the instructor; but, in the second place, it is certainly clear that not all students who may be considered as having originality are thereby qualified to carry on this type of work; the psychology of the individual concerned must certainly be considered. No student should ever be accepted for this type of work unless he himself has a sufficiently intense urge to make his obtaining an opportunity to do research a vital factor in his own consideration. He must be willing to make sacrifices in order to have the opportunity to do original work.

In considering the legitimate burden which any instructor may assume in the supervision of research students, it is necessary to consider the instructor individually. It is a frequent observation in any institution that some excellent teachers and fine investigators are incapable of, or lack interest in, assuming the direction of students engaged in research. Fortunately, on the other hand, there are others who find in the personal contact and the developing enthusiasm an adequate return for the effort required. These are the people who should, because of their own interest and desire, carry on the direction of research among students, and, as pointed out earlier, their freedom to select how many and which students they shall accept for work represents the basic principle on which an adequate return can be expected on the investment of their time and effort. As a general rule, in my department I do not advocate more than an average of one student to an instructor. It is safe, I think, to conclude that the greater the experience of instructors the more capable they are to guide research students. The custom of distributing responsibility in proportion to rank and experience is one which I consider a fundamental part of sound teaching organization and which I particularly wish to emphasize.

We assign a field of study rather than a problem, indicating to the student that this field is one worthy of general study and suggesting that he familiarize himself with some of the major points in the literature. During the time that he is doing this, and before a concrete problem has been evolved, he is encouraged to assist in experiments which are being carried on in the same field. It has been our experience that after approximately a year's apprenticeship the student will

find some individual phase of the general problem which particularly appeals to his interest, and this automatically becomes his particular problem. It has further been our experience that in only exceedingly rare instances can a medical student, during this required course, do more than follow through a single problem, whether it is done alone or jointly with some instructor. More than this tends to waste, in futility of effort and in diversification beyond the individual's capacity, the time available for such work.

The tendency to increase the amount of time available for elective work has been particularly noteworthy in recent years. This has been largely due to a general awakening on the part of the faculties of medical schools to the value of student research. It is generally felt that free time for students is best arranged in blocks of two or more months, rather than in scattered periods of so many hours a day or a week. For a selected group, under optimal circumstances, and engaging in particular types of work (most especially those involving elaborate apparatus or difficult chemical procedures) such a block of time may be most useful. For the majority of problems, involving animal experiments or morphologic examinations, such sharp distinctions between free time and a full curriculum is not advisable. A system whereby the student has some regular required work at all times throughout his medical course, but, in parallel with this, a reasonable number of distributed optional hours will, I think, in the majority of cases, produce better results.

The required class work of students must be somewhat better than the average before they are permitted to begin or continue special work in my department. Any student who has started work with us is checked repeatedly throughout his course in regard to his required work and is suspended from the special privileges of the department if his grades fall below what we consider a thoroughly satisfactory average. This may seem unfair to the peculiar case of an individual desiring so earnestly to specialize in a given branch that he feels that emphasis on required work is a burden to be endured. These individuals should not continue in a medical course but should be transferred to a special schedule leading to the degree of Doctor of Philosophy. It is fundamentally incorrect to permit any student to continue in a routine medical course and at the same time occupy his time and interest with special work to the detriment of his regular class work.

Nevertheless, my experience strongly supports the opinion that every student, regardless of his eventual career, should concentrate his every moment of free time within a single field. This, of course, makes it both possible and, often, advisable for a student to transfer his work from one department to another, an arrangement which would be much more difficult if his original assignment were more specific. This does not necessitate wandering in an intellectual sense, since the proper correlation and coordination of research activities should recognize no departmental boundaries but should develop in whatever combinations or relationships are to the best interests of the student.

DISCUSSION

DR. IRVING S. CUTTER, Chicago: I have a suggestion that may be of some value and one which is being used in many schools with a certain degree of success. For example, if the school is on the quarter system and graduates the man in January and his internship does not begin until the July or September following, or even later, there is a splendid opportunity, if the man is stimulated or intrigued by a certain department, to plunge into the work of that department and do a worth-while piece of investigation. Furthermore, if the student is so inclined, if the school is on the quarter system or even though it is not and is on the semester system, a semester or two or three quarters may be blocked right out of the student's undergraduate four years, that block being devoted wholly and intensively to the investigation of some research problem. Better still is the plan under which a student deliberately takes out of his undergraduate curriculum or adds to the undergraduate curriculum one full academic year, usually between the sophomore and junior years, lengthening his course then to five years, devoting his time to preclinical investigation. If he takes this fifth year and adds it to his four, and takes it at the end of the four straight years of the undergraduate curriculum, he can add to his scope by adding clinical investigation to the possibility of preclinical investigation which was rendered available by the knowledge of the first two years. If the student is surely intrigued or interested, I am sure that the latter plan of taking a block year either at the end of his sophomore year or at the end of his senior year is far more preferable.

DR. C. W. M. POYNTER, Omaha: I agree with Dr. Cutter as to the necessity of giving the student a sufficient amount of time to test the problem of the valuation of evidence. I can't feel that the investigative theme itself makes a great amount of difference. The contact with the stimulating instructor, together with the experience he has in the methods of research, it seems to me, is the fundamental and necessary point in developing that man. So far as opening this field for all the student body is concerned, I feel that many are called and few are chosen. We would be setting up machinery that for a great many students would not be at all profitable.

DR. W. H. MACCRAKEN, Detroit: We have had one experience that leads me to question whether the judgment of the members of the faculty as to the qualifications of a man for undertaking undergraduate research is always infallible. We had a student who was so bad that it was a question as to whether we would keep him in the school at all. He was entirely impatient of restraint and entirely unwilling, apparently, to interest himself in the curriculum. Finally, he worked himself into a position in which he had a lot of time. He had just about two courses to carry and the question was what to do with the rest of his time. He managed to attach himself to the department of pathology. Everybody was sorry for the professor of pathology, because he was burdened with this chap. He has worked in pathology now for nearly two years, and Dr. Davis says that he is invaluable and that he has peculiar gifts along the research line.

DR. C. C. BASS, New Orleans: There is one idea in favor of student research in medical schools that might be emphasized. That is the fact that if the student, whatever his possibilities may be, goes through the regular medical course and finally graduates into the practical side of medicine without ever having gotten a taste or encouragement in research, he is frequently lost to the possibilities that he otherwise might have. It isn't that so much is accomplished by students who undertake research. Most of them don't accomplish very much. On the other hand, they gain a great deal by their reading and are encouraged to think and develop, perhaps, into fields for which they are adapted. If they do not discover it during their undergraduate school days they frequently will not discover it afterward because they are lost in the other demands of medical practice.

DR. R. S. CUNNINGHAM, Nashville, Tenn.: In presenting the idea of students working part time throughout their medical course, in preference to working a solid period, I have been thinking of different types of research, certain types of problems. For example, in physiology a student needs complete days in which to do the work. On the other hand, in certain types of morphologic work he needs scattered hours at repeated intervals. The second point in that connection, to my mind, is the length of time involved. I have had in the last four or five years about six young men who had to drop out of the medical course for one reason or another. After coming into the department and working on various problems, their investigations accomplished little for the first six or seven months. Immediately there would be a sort of movement; they would start to work diligently and go ahead with great rapidly. It has seemed to me that there is a sort of latent period in the intellectual development of the student which necessitates a certain interval before he can really, as it were, get his second wind. I do not feel that one can be didactic about any particular method of research. Research must be a free and completely unhindered process. The student must be perfectly free to ask for it and the instructor must be perfectly free to select his students. The thing that I am perhaps most opposed to is any method whereby students must do research, whereby instructors must accept students.

Didactic Versus Practical in the Teaching of Clinical Medicine

DR. J. H. MEANS, Boston: I shall use the word "didactic" not in its strict dictionary meaning but rather to denote class-

room instruction as opposed to actual case work. I think this is consistent with common usage.

In general it may be said that the duty of clinical departments, like that of scientific ones, is to show how information may be gathered, and, when attained, how it may be interpreted. The student must be given the chance to observe and record and be inspired to study and think. He should get his facts for himself from patients, with such guidance as seems necessary, not have them handed to him in some sort of classroom exercise.

There remain, however, certain functions which the lecture can serve. There is also the consideration that most students like lectures; without them they are apt to feel adrift. Chief of these functions is that the lecture may serve to arouse interest. In the lecture, also, the student may be given a better orientation in a subject than he can acquire for himself from his case teaching and textbooks alone. The lecturer can emphasize the important things and minimize the unimportant. He can also present and discuss recent knowledge in his field and criticize new ideas, so that the student may be thoroughly exposed to the current of medical thought.

I do not wish to imply that lectures should be solely disputative and hortatory and never purely informative. A certain number of the facts that every physician must know lend themselves to classroom presentation. The description of technic, particularly if at the same time demonstration is required, comes in this category.

There is also the matter of the desirability of allowing all students of a school to come in contact with such master minds as that school may be fortunate enough to possess. This may be possible in the lecture alone. The function of the lecture under these circumstances is the inspirational or provocative much more than the informative. The master will stimulate ideas far more than implant facts. In certain instances it will be his intellectual brilliance, the newness and originality of his thoughts, that chiefly impresses; in others it will be his personality, his character, his ideals, the fruits of his experience that will sink deep. He will create disciples. One may remember a great teacher more for himself than for what he taught. He teaches by example.

In speaking of the relative value of practical training and didactic instruction in clinical medicine, I should like to mention the educational value of responsibility. There is nothing which incites medical students to the acquisition of professional skill more than giving them responsibility for the care of patients. The sooner in their careers this can be managed, the better. I recently read the address of welcome delivered by a distinguished anatomist to the students entering one of our leading medical schools. He had much to say of the awfulness of standardization in medical education and the necessity for freedom of thought and the development of a truly scholarly attitude on the part of the student. He must become learned since he is entering a learned profession. But learning is not all that is needed to make the good physician. Medical science is an applied science, and pure science and applied science are as far apart as the poles. They may, to a certain extent, speak the same language but their objects are utterly diverse. One is a means to an end; the other is an end in itself. The one seeks truth for truth's sake; the other seeks truth to help mankind. Which represents the loftier motive depends on one's philosophy of life. Medicine, however, is an applied science. In the training of students we should never lose sight of this, and the art of medicine, which includes but transcends the science, takes root in the feeling of responsibility the physician has for his patient's welfare and his desire to heal him.

In conclusion, then, I may say that trial of a curriculum in clinical medicine, in which actual case work by the students is relied on chiefly to supply them with factual knowledge, appears to have given a sounder training than the more didactic course which preceded it. A relatively small number of lectures seems desirable, not for the purpose of systematically covering a certain field but rather in order to give emphasis, orientation and, by the introduction of controversial points, to make the students think. The lecture should be the flavoring of the dish, not its chief ingredient. Dependence by students on lectures for their facts discourages observation, investigation and genuine study. Case work, on the contrary, stimulates all these and an occasional well planned lecture gives them balance, acceleration and direction. As an anatomist has wisely remarked, "The teacher now becomes a dependable and encouraging worker associated with the student." This working with the student instead of performing for him is, I believe, the essence of modern education.

DISCUSSION

DR. JAMES B. HERRICK, Chicago: None of us would wish to go back to the period when there was excessive didactic teaching. None of us today would feel that the way to teach an undergraduate how to feel for an enlarged spleen or how to listen for bronchial breathing or how to count the white blood corpuscles was to tell him how. We realize that he has to feel the spleen, to hear the breathing, to make his own blood count, in order to understand it, or in order to get the technic, and more than that, he must depend largely on himself to interpret the meaning of what he finds. He is, in other words, being trained in methods as well as in the acquisition of facts. Dr. Means touches the core of the matter when he lays emphasis on the fact that whether the didactic teacher is in the so-called large clinic or elsewhere makes little difference, and that the essential feature is the man. President Lowell said a few years ago to the freshman class, "Choose the man; don't choose the subject." The man in the didactic course, the master mind, as Dr. Means called him, is the man of learning, wisdom and experience, who appears before his students to tell them not so many facts but how to acquire facts. That kind of didactic teaching is, in essence, practical. There is a danger that in speaking of the practical teaching of medicine versus the didactic we give the impression that these two are diametrically opposed, that they are antagonistic, that they are hostile. I don't believe they are. They should be correlated; there should be cooperation. I think that the plan of Dr. Means shows a practical way of bringing it about.

DR. JOSEPH L. MILLER, Chicago: We all realize that two years is an extremely brief period in which to give a student a knowledge of clinical medicine with all its ramifications. It therefore behooves us to adopt a method of medical education that will give the student in those two years the largest amount of utilizable knowledge. The acquiring of a clinical knowledge of medicine is obtained largely through the cultivation of our special senses; that is, the students in clinical medicine must be taught to observe. The student must be taught to observe every possible feature of the patient he is studying. He must be taught to cultivate his sense of hearing, to interpret properly those things which he hears through the stethoscope and otherwise. He must be taught to cultivate the importance of the sense of smell. He must be cultivated in the sense of touch to the highest degree, and he should acquire some knowledge of the psychology of the sick. That, to my mind, is what the student needs in our medical schools. He must train his special faculties and acquire a knowledge of the psychology of the sick. The question is: What is the most important thing in medical education? Is it to cram the student just as full as we can of facts so that he may explode at the time of his examination? Or should we try to prepare him and acquaint him with the methods of acquiring knowledge so that he may continue to grow after he passes out from under our tutorship? The latter course will teach him the joy there is in acquiring knowledge as compared with getting information when it is handed to him on a silver platter. Such a person trained in the way to acquire knowledge must continue to grow.

DR. W. L. MOSS, Augusta, Ga.: It has been found in industry that certain rest periods during the day tend to increase the efficiency of the worker and increase the output. I have been inclined to think that a good many of the didactic lectures to which the student is treated serve as these comfortable rest periods during the day.

DR. IRVING S. CUTTER, Chicago: I wonder whether Dr. Means would tell us a bit more about how he effects these clinical contacts with the second and third year students, the character of patients, the number of hours, where they are, in the outpatient department or in the hospital, and so forth.

DR. LEWIS J. MOORMAN, Oklahoma City: One of the important features of Dr. Means' discussion, and this also applies to Dr. Cunningham's paper, is the fact that he is

attempting to give time for expression of individuality and initiative on the part of the medical student. I think we are all impressed with the fact that occasionally a person possessed of genius manages to get by the admission requirements and is inducted into the medical school. This plan of Dr. Means and that suggested by Dr. Cunningham are inclined to save to medicine the genius. If he succeeds in getting by he may find a niche in preclinical investigative work, or he may find his place in clinical research, and be saved to the profession of medicine. And he may come back to stimulate students who come later through the record of his accomplishments and the charm of his personality.

DR. C. F. MARTIN, Montreal: One thing that has occurred to me more than anything else with reference to didactic teachers is this: the great lack of good didactic teachers. I think great teachers are scarce in any community. Unless the didactic lectures can be given and presented in such a way that they not only will be examples of what a great personality is but will also present the subject in a way that is going to make it of value as a didactic lecture, we might just as well dispense with them. Our difficulty is in the lack of great teachers able to present their subjects. One of the dangers of clinical lectures is that they are apt to be didactic and not clinical. Having presented the paper, the teacher is apt to cast it aside and go on with a didactic lecture on a subject that fills neither the qualifications of a didactic lecture on the one hand nor a clinical lecture on the other.

DR. ALAN M. CHESNEY, Baltimore: I think you would be interested in knowing how a medical faculty reacted to a drastic curtailment of the required time, particularly for didactic lectures. Some five years ago the Johns Hopkins University School of Medicine revised the curriculum in the direction of reducing the total number of required hours to about half of the available hours in the four years, and eliminating a large number of didactic lectures. At the time, that experiment was received with enthusiasm by some members of the faculty and with a good deal of skepticism by others. We have now had experience with the new curriculum for a matter of five years. Last year the medical faculty appointed a committee to survey the medical school. This committee asked the department heads to appear before it and asked specific questions, such as, "Are you satisfied with the number of hours given you for instruction at the present time?" Somewhat to the surprise of the committee, every single department head expressed himself as being entirely satisfied with the amount of time at his disposal. I merely cite this instance to indicate that sometimes this major operation of elimination of a lot of didactic lecture hours can be done without detriment to the susceptibilities of the faculty.

DR. JAMES H. MEANS, Boston: In replying to Dr. Cutter's question about how this is actually arranged, the new curriculum in our course is divided into trimesters. In one trimester we give medicine and related specialties; in another, surgery and related specialties. Then we have the third trimester, in which the student gets a rather interesting form of instruction which includes, one might say, medical and surgical pediatrics and orthopedics. He gets everything there is to know about the child over a course of six weeks. We think that is a rather important feature of this three-year curriculum. In the medical trimester, three mornings are spent entirely in the dispensary and three other mornings on one of the specialties related to medicine. The students meet in small groups of six or eight men with an instructor. The work in medicine is straight clerk work, only it is a little more supervised, and a good deal like what the fourth-year men do. The students are actually given patients to work with and the instructor makes the rounds of the hospital and takes care of those patients. It is his job to see that the patients are cared for, and he does it along with the students. He can't wish the cases that he uses for teaching back to the staff of the dispensary; he has to take care of them himself. I was interested in what Dr. Chesney had to say about the experience at Johns Hopkins. We have had precisely the reverse experience in Boston. Every one of the special departments complained strongly about the reducation of hours allotted to the department for didactic teaching, but they have finally submitted, as they more or less had to. I think that now they are reconciled, but I am not sure that they are actually content.

(To be continued)

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

State Medical Meeting and Election.—At the fifty-seventh annual session of the Arkansas Medical Society in Little Rock, April 5-7, Dr. William H. Mock, Prairie Grove, was installed as president. Dr. Leonce J. Kosminsky, Texarkana, was chosen president-elect. Other officers are Drs. Shelbey B. Hinkle, Little Rock, Grace Tankersley, Pine Bluff, and Charles S. Holt, Fort Smith, vice presidents; Royal J. Calcote, Little Rock, treasurer, and William R. Bathurst, Little Rock, secretary, reelected. The next annual session will be held at Hot Springs. The meeting was held under the presidency of Dr. Darmon A. Rhinehart, Little Rock. Guest speakers included Drs. Stanford Chaille Jamison, New Orleans, "Aortic Regurgitation"; Harry S. Crossen, St. Louis, "Clinical Features of Pelvic Endometriosis"; Arthur E. Hertzler, Kansas City, Mo., "Diagnosis of Obscure Conditions of the Right Upper Quadrant"; William H. Olmsted, St. Louis, "Diabetic Gangrene," and James M. Martin, Dallas, Texas, "Carcinoma of the Skin, Lip and Inside of the Mouth."

COLORADO

Society News.—A symposium on anesthesia was presented at the meeting of the Pueblo County Medical Society, February 16.——Dr. John B. Farley, Pueblo, addressed the Otero County Medical Society, March 10, on "Relief of Pain in Obstetrics."——A program of case reports constituted the meeting of the Boulder County Medical Society in Boulder, April 14. The participating physicians were Drs. Frank R. Spencer, Claude D. Bonham, Emley B. Queal, C. W. Bixler, Carbon Gillaspie and Oscar M. Gilbert.——Dr. Nolie Mumey addressed the Medical Society of the City and County of Denver, April 19, on "Odyssey of Malformation and Disease of the Human Breast," and Dr. Edward Jackson, "Habit Forming Drugs."

Portrait Presented to County Society.—At a recent meeting of the Medical Society of the City and County of Denver, Dr. Robert Levy, representing Mrs. T. H. Hawkins, widow of the late Dr. Thomas H. Hawkins, presented to the society a large portrait of Dr. Hawkins. Accompanying the portrait was a letter which had been sent to Dr. Hawkins by the board of trustees, Jan. 3, 1911, acknowledging receipt of Dr. Hawkins' library, which he had given to the society. Mrs. Hawkins also gave $100 for the purchase of books for the library. The society was addressed, April 5, by Dr. Harry J. Corper on "Life of Robert Koch"; Col. Earl H. Bruns, "Clinical Significance of the Discovery of the Tubercle Bacillus," and Dr. Henry Sewall, "Some American Pioneers in the Antituberculosis Campaign."

DISTRICT OF COLUMBIA

District Bill in Congress.—S. 1769 has been signed by the President, authorizing pay patients to be admitted to the contagious disease ward of the Gallinger Municipal Hospital.

Early Diagnosis Campaign.—Dr. Arthur C. Christie, president, Medical Society of the District of Columbia, has been selected as chairman of the executive committee in charge of the annual early diagnosis campaign of the Association for the Prevention of Tuberculosis, which was launched in the District the first part of April. In a talk, reviewing the history of "Tuberculosis Reporting," Dr. Christie appealed for more effective reporting of cases. Among other speakers in the opening meeting were Drs. Kendall Emerson, managing director, National Tuberculosis Association, New York, and James G. Cumming, chief, bureau of preventable diseases of the health department of the District.

Annual Meeting of District Medical Society.—The annual session of the Medical Society of the District of Columbia will be held, May 4-5, under the presidency of Dr. Arthur C. Christie, Washington. Dr. Haven Emerson, New York, will address a public meeting, May 5, on "The Mutual Responsibility of the Medical Profession and the Laity in the Organization of Preventive Efforts in a Community." Other guest speakers will be Drs. Joseph F. McCarthy and Emanuel Libman, both of New York, on "A Summary of Recent

Developments in Endo-Urethral Surgery of the Prostate Gland" and "Coronary Thrombosis," respectively. Included in the tentative program are symposiums on acute appendicitis, vascular disease and cardiac disease. A session, Wednesday, will be devoted to miscellaneous subjects: Drs. Elijah W. Titus and Bernard Notes, "Gonorrhea in Female Children, with Special Reference to Newer Methods of Treatment"; Joseph B. Bogan, "Basal Anesthetics: A Brief Consideration of Their Effects and Comparative Safety"; Claude Moore, "Differential Diagnosis by X-Ray of Primary Bone Tumors"; William Thornwall Davis, "Modern Conception and Treatment of Convergent Squint," and Jose G. Lewis, "Perforation of Duodenal Ulcer Following Immoderate Drinking of Alcohol."

ILLINOIS

Stores Closed for Physician's Funeral.—A proclamation was issued by the mayor of Geneseo asking the business houses to close for two hours, April 22, during the funeral services of Dr. Elon B. Gilbert. Dr. Gilbert, who was 72 years old, was born in Geneseo and had practiced there forty-seven years. He was the oldest physician in the city in years of continuous service. He graduated from Jefferson Medical College, Philadelphia, in 1885. Dr. Gilbert had also served as city health officer and as president of the board of health.

State Medical Meeting at Springfield. — The eighty-second annual meeting of the Illinois State Medical Society will be held at Springfield, May 17-19, with headquarters at the Abraham Lincoln Hotel, under the presidency of Dr. Roy R. Ferguson, Chicago, who will speak on "Medicine and Big Business." The general opening meeting, Tuesday, will be addressed by Dr. Edward H. Cary, Dallas, Texas, President, American Medical Association, on "The Sequential Development of the Physical Sciences." Dr. Fred M. Smith, professor of theory and practice of medicine, State University of Iowa College of Medicine, Iowa City, will give the oration in medicine, Wednesday afternoon, on "Modern Aspect of Rheumatic Heart Disease," and Dr. Jabez N. Jackson, Kansas City, Mo., the oration in surgery, on "Physiologic Considerations in Surgery of the Abdomen." Included among the guest speakers will be Drs. Harry E. Kleinschmidt, New York, on "Public Health Education"; William W. Herrick, New York, "Toxemias of Pregnancy and Their End-Results from the Viewpoint of Internal Medicine"; Floyd E. Keene, Philadelphia, subject not announced; Sherwood Moore, St. Louis, "Diagnosis and X-Ray Treatment of Malignant Diseases of Bone"; David P. Barr, St. Louis, subject not announced; Alfred J. Brown, Omaha, subject not announced; John T. Murphy, Toledo, Ohio, "Some Observations About the Treatment of Uterine Fibroids"; Frank R. Spencer, Boulder, Colo., "Diagnosis and Treatment of Laryngeal Tuberculosis"; Samuel G. Higgins, Milwaukee, Wis., "Safest Cataract Operation with Reference to Astigmatism Following Corneal Conjunctival Suture"; Alexander E. MacDonald, Toronto, Canada, "Types of Ocular Hemorrhage," and Harry A. Harding, Ph.D., Detroit, "Pasteurization versus Raw Milk." There will also be a symposium on public health education. Following the president's dinner, Wednesday evening, the president's certificate will be presented to Dr. Ferguson. A program of entertainment, including a golf tournament, will be provided for both the medical society and members of its auxiliary.

Chicago

Course on Neurology of Eye and Ear. — Dr. Ignatz Sommer, assistant in the Policlinic, University of Vienna, Vienna, will give a fifteen hour course on neurology of the eye and ear about May 15, provided a minimum of fifteen students register. The course will be given at the Illinois Charitable Eye and Ear Infirmary. The fee will be $15. Further information may be had from Drs. Alfred Lewy or Morris A. Glatt.

Academy of Sciences Observes Anniversary. — The Chicago Academy of Sciences, the oldest cultural organization in Chicago, celebrated its seventy-fifth anniversary, April 11. The principal address was given by William D. MacMillan, Ph.D., professor of astronomy, University of Chicago. Officers of the academy are: president, Henry C. Cowles, Ph.D., University of Chicago; vice presidents, Francis R. Dickinson, succeeding William H. Haas, Ph.D., resigned, and Dr. Edmund Andrews, and secretary, Dr. Nathan S. Davis III. The Chicago Academy of Sciences was founded, Jan. 13, 1857. It is supported by its members, affiliated societies and endowments.

Society News. — Dr. Allen K. Krause, Tucson, Ariz., addressed an open meeting, April 20, under the auspices of the Institute of Medicine of Chicago and the Research Club of the University of Illinois College of Medicine. His subject was "Tuberculosis, a Generalized Infection."——Dr. Frederic W. Schlutz, among others, addressed the Chicago Pediatric Society, April 19, on "The Significance of Obscure Abdominal Pain in the Older Child."——The Chicago Neurological Society was addressed, April 21, among others, by Dr. Harry L. Parker, Rochester, Minn., on "Paraspasm Facialis."—— Dr. Nathaniel G. Alcock, Iowa City, Iowa, addressed the Chicago Urological Society, April 27, on "Eight Months with Transurethral Prostatic Resection," and Drs. Joseph S. Eisenstaedt and Tyrrell G. McDougall spoke on "An Analysis of Urologic Malignancies Seen in 1931." —— Fay-Cooper Cole, Ph.D., will address the Chicago Laryngological and Otological Society, May 2, on "Rediscovering Illinois."

Graduate Courses at Michael Reese.—A three weeks course in diseases of the heart and circulation will be offered at Michael Reese Hospital, beginning May 16. This course aims to cover the physical examination and history taking of cardiac cases, and to present the various aspects of the differential diagnosis, prognosis and management of cardiac diseases. It will also include a survey of the value of the electrocardiogram. The course aims to introduce the more recent developments that have taken place in the laboratory and the clinic in the knowledge of heart and circulatory diseases, emphasis being placed on their practical clinical application. The stomach study group of the hospital will conduct a graduate course in diseases of the stomach, duodenum and colon, to begin May 16 and continue to June 11. The principal subjects to be considered are gastric and duodenal ulcers, gastrojejunal ulcer, carcinoma of the stomach, lesions of the esophagus, diseases of the colon, ulcerative colitis, carcinoma of the colon and rectum, and diseases of the gallbladder and liver. Information on both courses may be obtained from the medical librarian at Michael Reese Hospital.

IOWA

State Medical Meeting at Sioux City.—The eighty-first annual session of the Iowa State Medical Society will be held in Sioux City, May 4-6, under the presidency of Dr. Channing G. Smith, Granger. Headquarters will be at the Masonic Temple. Dr. Henry L. Ulrich, Minneapolis, will give the address in medicine on "Pulmonary Arteriosclerosis—A New Clinical Tripod." Dr. Dean Lewis, professor of surgery, Johns Hopkins University Medical School, Baltimore, will give the address in surgery on "Fundamental Knowledge of Cancer"; other out-of-town speakers will include Hal Downey, Ph.D., professor of anatomy, University of Minnesota Medical School, Minneapolis, "Present-Day Knowledge of Cell Formation and Pathology," and Drs. William V. Mullin, Cleveland, "Cancer of the Larynx"; Chester A. Stewart, associate professor of pediatrics, University of Minnesota Medical School, "Diagnosis of Childhood Tuberculosis"; Anton J. Carlson, professor of physiology, University of Chicago, Chicago, "Child Health and Protection: The Physician's Responsibility," and Mary H. Swan, Chicago, "Significant Laboratory Tests for the General Practitioner." Entertainment will include a smoker and card party, Wednesday, and luncheon and the annual banquet, Thursday. The woman's auxiliary of the society will meet, May 4-5, at the Hotel Martin. The thirty-fifth annual meeting of the State Society of Iowa Medical Women will be held Wednesday, May 4, at the Hotel Martin. Dr. Swan will address this group on "Strategic Position in the Treatment of Syphilis," and Dr. Mary L. Tinley, Council Bluffs, on "Albuminuria-Anuria of Extrarenal Origin" with case report.

MICHIGAN

Supreme Court Upholds Revocation of Van Hyning's License.—The Michigan Supreme Court, March 2, upheld the revocation by the Michigan State Board of Registration in Medicine of the license to practice of Dr. Homer Bailey Van Hyning, Detroit, who associated himself with Harry M. Hoxsey. Dr. Van Hyning acted as director of Hoxsey's "cancer clinic." The state medical board revoked his license, March 30, 1931, charging unprofessional conduct and the maintaining of professional connection with an unlicensed person (THE JOURNAL, April 11, 1931, p. 1239). Hoxsey also operated at Taylorville, Ill., and in Muscatine, Iowa.

Society News.—Dr. William G. Savage, London, England, addressed the Wayne County Medical Society, Detroit, April 19, on "Food Poisoning and Food Infections." Dr. Savage is professor of hygiene in the University of London and in the University College of Cardiff. The society was addressed, April 26, by Dr. Harvey Campbell of the Detroit Board of Commerce on "Where Is Detroit Going?" Dr. Rosco G.

Leland, director, Bureau of Medical Economics, American Medical Association, Chicago, spoke on "Current Trends in Medical Practice." This was a joint meeting of physicians, dentists and druggists.——Dr. H. Wellington Yates addressed the West Side Physicians Association, Detroit, April 21, on "Care of the Uterine Cervix."——Dr. Carleton J. Marinus, Detroit, addressed the Washtenaw County Medical Society, April 14, on "Hypogonadism." Chalmers J. Lyons, D.D.Sc., Ann Arbor, will address the society, May 10, on "Borderline Diseases."

MISSISSIPPI

Society News.—The Clarksdale and Six-Counties Medical Society was addressed, March 24, among others, by Drs. Edward C. Mitchell, Memphis, Tenn., on "Care of Infants and the Preschool Child"; John L. McGehee, Memphis, "Present-Day Mortality of Appendicitis," and Julius L. Levy, Clarksdale, "Responsibility of the Public for Its Own Death Rate."——Dr. Percy W. Toombs, Memphis, Tenn., among others, addressed the North Mississippi Medical Society, March 16, on "Toxemias of Pregnancy."——The Tri-County Medical Society was addressed recently at Wesson by Drs. Ashford H. Little, Oxford, on "Diagnosis and Treatment of Seasonable Hay Fever"; Thomas F. Conn, Monticello, "Handling Emergency Cases in the Home," and Richard S. Savage, Brookhaven, "Injection Treatment of Hemorrhoids."——At a recent meeting of the Jackson County Medical Society, Dr. Theodore J. Dimitry, New Orleans, spoke on "The Fifth Nerve, Its Anatomy, Physiology and Pathology as They Concern the Physician and Dentist."

NEBRASKA

Society News.—Drs. Clyde A. Roeder and Manuel Grodinsky addressed the Omaha-Douglas County Medical Society, Omaha, April 12, on general anesthesia and the blood sedimentation test, respectively. Dr. Rosco G. Leland, Chicago, addressed the society, April 19, on medical economics.

Graduate Course at Nebraska.—The University of Nebraska College of Medicine will offer a graduate course, June 6-11, under the auspices of the departments of obstetrics and pediatrics. It will be confined largely to practical work in the wards and clinics. The fee for the course will be $10, and the number accepted will be limited to thirty. Unless ten have registered by May 15, the course will be withdrawn. All communications should be addressed to the dean's office.

NEW HAMPSHIRE

Five Year Cancer Program.—The second school of instruction in cancer, sponsored by the Thirty-Third District Lions' Clubs of New England, was held, April 12, at the Lucy Hastings Hospital, Manchester. This is a part of a program of cancer educational effort which the Lions' Clubs plan to carry on for the next five years. The schools are held three times a year on the second Tuesdays in April, September and December. The clubs are also sponsoring radio broadcasts on cancer, and distributing literature on the subject. The program, April 12, included talks by Drs. Harry Wallerstein, New York, on "Tumors of the Adrenal Gland"; Sidney C. Dalrymple, Newton, "Cancer of the Blood Forming Organs," and Harold G. Giddings, Boston, "Cancer of the Breast." A moving picture on "The Growth of the Human Tumors in Vitro" was also shown.

NEW YORK

Society News.—Dr. La Salle Archambault, Albany, addressed the Medical Society of the County of Albany, April 26, on the effect of noise on the nervous system, and Dr. Nelson K. Fromm spoke on diagnosis and treatment of chronic encephalitis.——The Eastern New York Eye, Ear, Nose and Throat Association was addressed, April 20, by Dr. Chevalier Jackson, Philadelphia, on "Bronchoscopy in Its Relation to Medicine and Surgery."——Dr. Henry D. Niles, New York, addressed the Tompkins County Medical Society, Ithaca, April 5, on "Diagnosis and Treatment of the More Common Skin Diseases."

Health at Utica.—Telegraphic reports to the U. S. Department of Commerce from eighty-five cities with a total population of 37 million, for the week ended April 16, indicate that the highest mortality rate (22.4) appears for Utica, and the rate for the group of cities as a whole, 12. The mortality rate for Utica for the corresponding period last year was 15.8, and for the group of cities, 12.9. The annual rate for eighty-five cities for the fifteen weeks of 1932 was 12.6, as against a rate of 13.9 for the corresponding period of last year. Caution should be used in the interpretation of weekly figures, as they fluctuate widely. The fact that some cities are hospital centers for large areas outside the city limits or that they have a large Negro population may tend to increase the death rate.

New York City

Biggs Memorial Lecture.—Dr. Lawrason Brown, Saranac Lake, will deliver the Hermann M. Biggs Memorial Lecture, May 5, at the New York Academy of Medicine. Dr. Brown's subject will be "Robert Koch and His Life Work." The Biggs Lecture was established in 1925 by the widow of Dr. Biggs and until 1931 was administered by the New York Tuberculosis and Health Association and the Medical Society of the County of New York.

Hospital Anniversary.—The Hospital for Joint Diseases celebrated the twenty-fifth anniversary of its founding during the week of April 15-21, with a "clinical week." Demonstrations were held each day on the various services of the hospital, and a special clinic on varicose veins was held Thursday evening, April 21. A program of case presentations was given Friday evening, April 15, for the orthopedic section of the New York Academy of Medicine by fifteen physicians of the hospital staff. Also a part of the celebration was a dinner at the Plaza, Saturday, April 16, at which the speakers included Dr. David Kaliski, president of the Medical Society of the County of New York; Dr. Samuel Kleinberg, president of the medical board of the hospital, and Dr. John G. William Greeff, city commissioner of hospitals. The woman's auxiliary and the social service department also held a special observance at their annual meeting during the week. The auxiliary was organized only one week after the organization of the hospital. The Hospital for Joint Diseases had its beginning in a clinic founded by the late Dr. Henry W. Frauenthal. There were then only seven beds and a dispensary. The institution now has a capacity of 355 patients and sixty additional beds in its country home.

Society News.—The meeting of the International and Spanish Speaking Association of Physicians, Dentists and Pharmacists, April 15, was devoted to a symposium on allergy.——The Medical Society of the County of Kings was addressed, April 19, by Drs. Walter M. Simpson, Dayton, Ohio, on "Undulant Fever," and Louis Gross, "Histological, Pathological and Bacteriological Considerations in Valvular Defects in Rheumatic Fever."——At the meeting of the Brooklyn Society of Internal Medicine, April 22, Dr. Norman M. Keith, Rochester, Minn., spoke on "Diagnosis and Treatment of Diseases of the Kidney: Significance of Estimation of Renal Function." Dr. Leo L. Burger, Rochester, will address the society, May 27, on endarteritis.——Dr. George Baehr addressed the East New York Medical Society, April 18, on "Clinical and Pathologic Varieties of Lymphosarcoma."——Carl R. Moore, Ph.D., Chicago, and Dr. Robert T. Frank addressed the Bronx County Medical Society, April 19, on "Enduring Quest for Rejuvenation: Retrospect and Prospect" and "Rôle of the Internal Secretions of the Ovary in Health and Disease," respectively.——Among others, Dr. John Stanley Kenny addressed the Bronx Pathological Society, April 28, on "Pathogenesis of Jaundice."——The section on otolaryngology of the New York Academy of Medicine held a commemorative meeting, April 20, in honor of Dr. John E. MacKenty, who died, Dec. 11, 1931. The guest speaker was Dr. Fielding O. Lewis, Philadelphia, who gave an address on "Outstanding Points in Laryngectomy as Developed by Dr. MacKenty."

NORTH DAKOTA

Society News.—Dr. Irvine McQuarrie, Minneapolis, addressed the Grand Forks District Medical Society in Grand Forks, January 13, on "Some Recent Observations on the Management of Convulsive Disorders in Childhood."

Trichinosis Reported for First Time.—Trichinosis was reported in North Dakota recently for the first time, newspapers state, when a group of farmers near Cando contracted the disease following the eating of smoked pork. The hogs had been butchered in December. The meat had been smoked, then eaten in sandwiches without having been cooked. All those who ate the meat became ill.

OHIO

Hanna Lecture in Cleveland.—Prof. Albert Policard, professor of histology in the University of Lyons, France, will deliver a Hanna Lecture at the Institute of Pathology, Western Reserve University, May 16, on "The Evolution of Histochemistry."

Appointments at the University of Cincinnati.—Promotions of the following members of the faculty of the University of Cincinnati College of Medicine were announced in March: Drs. Frank M. Coppock, Jr., to associate professor in gynecology; John R. Stark, to assistant professor in gynecology, and Vernon B. Roberts, to assistant professor in gynecology.

Years of Gratuitous Service.—For twenty-five years of gratuitous service to St. Francis Hospital, Cincinnati, Drs. Raymond E. Gaston and David E. Weaver were given tribute, April 7, by members of the staff and Sisters of the Poor of St. Francis in charge of the institution. Testimonials were presented to the two physicians and each received a purse of $50 in gold from the members of the staff.

OREGON

Personal.—Dr. Alfred H. Johnston, Oregon City, has been appointed health officer of Clackamas County, succeeding Dr. Walter H. Miller, resigned.——Dr. Walter E. Hempstead, Bridal Veil, has been appointed health officer of Aurora, succeeding Dr. Benjamin F. Giesy.——Dr. Elza D. Johnson, Klamath Falls, was appointed a member of the state board of medical examiners to succeed Dr. Claude R. Matthis, Corvallis, whose term had expired.

PENNSYLVANIA

Society News.—Dr. Dean Lewis, Baltimore, addressed the Pittsburgh Academy of Medicine, April 26, on "Development of Surgical Operations Upon the Stomach," and Dr. Thomas R. Brown, Baltimore, spoke on "Surgery of the Digestive Apparatus from the Point of View of the Internist."—The Tenth Councilor District Medical Society was addressed at its annual meeting, April 27, among others, by Drs. Frank C. Hammond, Philadelphia, on "Genital Bleeding," and Leonard G. Redding, Scranton, "Present Day Concept of Heredity."

Philadelphia

Personal.—Dr. Charles T. Russell, Jr., has been appointed assistant chief surgeon of the city police department to succeed Dr. Charles E. Bricker, who recently retired because of ill health.——Dr. Frederick S. Baldi has been appointed acting superintendent of the Philadelphia county prisons.

Dr. Wray Honored.—Dr. William S. Wray was presented with a clock, April 15, at the reception of the Medical Club of Philadelphia, in recognition of his twenty years' service as secretary of the club. The presentation was made by Dr. Frederick S. Baldi. Guests of honor at the reception were Drs. J. Norman Henry, director of public health of Philadelphia, and George A. Knowles, assistant director. Dr. Isidor P. Strittmatter, president of the club, gave a dinner previous to the reception.

Medals Awarded by County Society.—Nine physicians were honored at a special meeting of the Philadelphia County Medical Society, April 20, which was held to announce the recipients of the I. P. Strittmatter Award. Although the award was created in 1923, this is the first time it has been given. The nine physicians are: Drs. William W. Keen, for the year 1923; Albert P. Brubaker, 1924; James M. Anders, 1925; John Chalmers Da Costa, 1926; Chevalier Jackson, 1927; David Riesman, 1928; George A. Knowles, 1929; George E. Pfahler, 1930, and John A. Kolmer, 1931. Dr. Isidor P. Strittmatter, in 1923, created an invested fund of $5,000, the interest on which was to be used for making an annual award under the auspices of the Philadelphia County Medical Society to a member of the society "who has made the most valuable contribution to the healing art, including remedial measures, surgical or medical, or a contribution to one of the fundamental sciences of medicine, having a beneficial influence on either medicine or surgery, or who has rendered any extraordinary meritorious service redounding to the credit of the medical profession." It was decided that the award should be in the form of a gold medal bearing on one side an appropriate design and the words "The Dr. I. P. Strittmatter Award," and on the reverse side "The Philadelphia County Medical Society" together with the name of the physician to whom the award is made and the year for which it is given.

TENNESSEE

State Medical Election.—Dr. William P. Wood, Knoxville, was elected president of the Tennessee State Medical Association at its annual meeting in Memphis, April 14, succeeding Dr. Thomas R. Ray, Shelbyville. Other officers elected are: Drs. Edwin W. Cocke, Bolivar, William D. Anderson, Chattanooga, and John T. Moore, Algood, vice presidents, and Harrison H. Shoulders, Nashville, secretary, reelected. Nashville was chosen for the place of the next annual meeting.

TEXAS

State Medical Meeting at Waco.—The sixty-sixth annual session of the State Medical Association of Texas will be held in Waco, May 5-7, with headquarters at the Austin Avenue Methodist Church. Included among the guest speakers will be Drs. Albert Soiland, Los Angeles, "Surgical Implantation of Radium Needles in Cancer of the Breast"; Ludo von Meysenbug, New Orleans, "Infant Feeding with Especial Reference to Some of Its Problems During the First Year"; William P. McCrossin, Jr., Colorado Springs, Colo., "Indications for Thoracoplasty and Its Technic"; Max J. Exner, New York, "Prevention of Cardiovascular Syphilis"; Grandison D. Royston, St. Louis, "Uses and Abuses of Pituitary Extract and Anesthesia in Labor"; John W. Gray, Newark, N. J., "Rheumatic Fever and Rheumatoid Arthritis from the Laboratory Point of View"; Albert E. Bulson, Fort Wayne, Ind., "Eye Fundus Lesions of Nephritis"; Alfred W. Adson, Rochester, Minn., "Diagnosis and Treatment of Spinal Cord Injuries"; Francisco M. Fernandez, Havana, Cuba, "Relationship between the Medical Profession of the United States and Latin America"; Rosco G. Leland, Chicago, "Current Trends in Medical Practice"; John A. Sevier, Colorado Springs, "Practical Points in the Treatment of Tuberculosis"; George D. Huff, San Diego, "Technic of Spinal Anesthesia in Gynecology and Obstetrics"; Burton J. Lee, New York, "Treatment and End Results in Primary Operable Cancer of the Breast"; William Wayne Babcock, Philadelphia, "Newer Methods for the Surgical Treatment of Diseases of the Cardiovascular System"; Burt R. Shurly, Detroit, "Vitamins in Relation to the Defense Mechanism"; Charles H. Best, Toronto, Canada, "Insulin as a Research Instrument and Therapeutic Measure"; Francis M. Pottenger, Monrovia, Calif., "Relationship of Tuberculosis to General Medicine," and Clarence C. Little, LL.D., New York, "Experimental Research in Cancer Control." Other societies meeting at this time will be the Texas Radiological Society, which will hold its nineteenth annual session, and the Texas Neurological Society.

GENERAL

Society News.—Dr. Daniel J. Glomset, Des Moines, Iowa, was made president-elect of the Medical Society of the Missouri Valley at its annual meeting in Omaha, March 29-31. Dr. William P. Wherry, Omaha, was inducted into the presidency. Dr. Joseph D. McCarthy, Omaha, is secretary.

Aid for Education.—More than 50,000 scholarships and fellowships are available annually in the United States for students who need financial assistance to finish their education, according to bulletin 1931 number 15, recently issued by the Federal Office of Education, which lists scholarships at 402 colleges and universities with a money value of about $10,000,000. Information concerning each grant is furnished in the bulletin, which may be obtained from the Superintendent of Documents, Washington, D. C., price 30 cents.

The Ross Fund.—Information has been received by the president of the British Ross Award Fund that sufficient funds have been received for the tribute to Sir Ronald Ross, begun last summer (THE JOURNAL, July 25, 1931, p. 256). It was planned to raise a fund of a million shillings for Sir Ronald, discoverer of the rôle of the mosquito in the transmission of malaria. About $500 was contributed by American physicians through the Ross Award Fund of America, of which Dr. Robert L. Pitfield, Philadelphia, was secretary.

Annual Report on Sight Saving.—Blindness due to ophthalmia neonatorum was found in 7.5 per cent of new admissions to schools for the blind in 1931, a reduction of 73.4 per cent since 1907, according to the annual report of the National Society for the Prevention of Blindness. In a study of eye accidents in childhood it was estimated that from 750 to 1,000 occur each year, of which 31 per cent are caused by weapons. The society urges improved legislation and continued education concerning eye hazards. In cooperation with the department of education of Columbia University, the society began a study to determine the actual effect of reading on the eyes—whether there is a saturation point beyond which the eye suffers regardless of lighting or good vision. Sight-saving classes for school children reached 398 in 1931, but more than 4,600 more are needed, it is estimated. Other projects begun or continued during the year were a demonstration of value of special medical social eye workers, follow up of glaucoma patients, and the gathering of statistics on causes of blindness.

Report of National Leprosarium. — Nineteen patients were paroled from the National Leper Home, Carville, La., during the fiscal year ended June 30, 1931. The average daily population of the hospital during the year was 322, but there were 337 patients under treatment at the end of the year. Sixty-three new patients were admitted and twenty-three died. The medical officer reports an increase in the use of physical methods as palliative measures in the treatment of orthopedic conditions with a corresponding reduction in the number of operations for the eradication of necrotic areas. A severe and prolonged epidemic of erysipeloid leprous reaction caused a large increase in admittances to the infirmaries. Interest in the use of occupational therapy was said to be lagging, largely because of the ill effects on the hands caused by minor injuries sustained while handling rough materials. The addition of new recreations has effected notable improvement in the general morale of the patients. Another factor that has contributed to a change in mental attitude is the encouragement brought about by the paroling of a considerable number of patients. There has been an increase in the annual number of voluntary admissions.

Millions of Handicapped Children.—More than 5,000,000 children in the United States are handicapped to an extent requiring special attention and education, according to a survey recently completed by the committee on special classes of the White House Conference. The following classes of defective children were reported: 3,000,000 with impaired hearing, 1,000,000 with defective speech, 1,000,000 with weak or damaged hearts, 450,000 mentally retarded, 300,000 crippled, 14,000 blind and 50,000 partly blind. Of the 14,000 blind, only 6,000 are being educated; and only one tenth of those who should be in sight-saving classes are enrolled in such classes. Less than 20,000 of those with impaired hearing are receiving special training, and only 60,000 of those handicapped by defective speech are having remedial training. Less than 60,000 of those who are mentally retarded are enrolled in special classes. The need for education of the handicapped is evidenced by the 500,000 inmates of prisons, hospitals for mental disease, almshouses and institutions for the feebleminded, the report points out. Educating these children now is expensive, but it is undoubtedly less so than caring for them as public charges later, it was said. George Aubrey Hastings, administrative assistant to President Hoover, has recently been released to serve for a year as extension director of the conference in a follow-up campaign carried on through the Continuation Committee (THE JOURNAL, Dec. 19, 1931, p. 1901). Twenty-two states have already held follow-up conferences. Mr. Hastings will assist in planning others and carrying out other methods for the dissemination of the conclusions of the White House Conference.

Medical Bills in Congress.—*Changes in Status:* Hearings were held, April 19, before the Senate Committee on Agriculture and Forestry, on S. 3853, a bill to regulate interstate and foreign commerce in poisonous volatile substances intended for household consumption. H. J. Res. 361 has been reported to the House, without amendment, authorizing the Surgeon General of the U. S. Public Health Service to make a survey of existing facilities for the protection of the public health in the care and treatment of leprous persons in the territory of Hawaii. *Bills Introduced:* An amendment to S. 3769, proposed by Senator Copeland, New York, to extend the provisions of the Emergency Officers' Retirement Act to all persons enrolled as officers in the United States Naval Reserve Force during the period April 6, 1917, to July 2, 1921, who during such period served as officers of any vessels engaged in the transportation of armed troops between the United States and the European continent, whether or not such officers were called into active service. S. 4436, by Senator Hatfield, West Virginia, providing that existing prohibitions relating to the dissemination of information or devices for the prevention of conception shall not apply to any book or information relating to the prevention of conception, or article, instrument, substance, drug, medicine, or thing designed, adapted, or intended for the prevention of conception, for use (1) by any physician legally licensed to practice medicine in any state, territory, or the District of Columbia, or by his direction or prescription; (2) by any medical college legally chartered under the laws of any state, territory, or the District of Columbia; (3) by any druggist in his legitimate prescription business; or (4) by any hospital or clinic licensed in any state, territory, or the District of Columbia. H. R. 11550, by Representative Crail, California, to enact a uniform pension law for disabilities incurred in war service and granting pensions to certain soldiers, sailors, marines and nurses who served the United States in time of war.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 2, 1932.

The Reform of Medical Education

In a previous letter was reported a discussion at the Edinburgh University Union on the need of the reform of medical education. Under the caption "The Student in Irons," Dr. C. M. Wilson, dean of the Medical School of St. Mary's Hospital, has written on the same subject and initiated a discussion in the *British Medical Journal*. Dr. Wilson complains that the medical curriculum is based on a misconception—that its purpose seems to be not to train and test habits of thought but to collect and store a set of facts as squirrels hoard nuts on which they hibernate. These facts are to be the student's capital, and he must perforce live on it throughout his working life, for he has not been put in the way of adding to his possessions as time passes. Presently it shrinks and he must needs replace it by a stock of worldly wisdom built on a growing discernment of the ways of human nature, so that soon he is as cunning in the management of men as he is helpless in the control of their diseases. It is said that the English student is safer, more practical and more responsible at the time of graduation than the graduate of other lands. But it is also said that he has little power of growth; ten years later he stands much where he did, while his foreign contemporary is forging ahead, because his teachers never for a moment forgot that one day he must reason for himself. Further, the medical curriculum is growing at such a rate that it will soon be no longer necessary to argue that it is unsound, for it will be physically impossible. Dr. Wilson's solution is that we should recognize that the making of a physician is not primarily a professional but an educational question. We can teach him but a fraction of what is known, and it is not possible to foresee all the situations that he will meet hereafter. Facts he must have, but a system which has become too narrowly concerned with their mechanical acquisition is wrong. We can and should foster his natural power of collecting such facts, teaching him to develop the habit of thought.

Dr. J. A. Ryle, physician to Guy's Hospital, agrees with Dr. Wilson as to the need for reform but thinks he is a little too doleful. The curriculum is overburdened and cannot be further extended; the student is compelled to memorize, especially in the preclinical period, a mass of facts and technicalities which are of small use to him afterward and are in large part rapidly forgotten; he is given too little opportunity for thought and observation and for self-training, so fully is his time occupied in "cramming" many subjects in order to reach a stipulated examination standard in each; he wastes many hours watching operations from afar which he will never be called on to perform or in regard to which he would do better to seek instruction in the postgraduate period. Finally, there is far too little interchange between his departments and periods of instruction, so that anatomy and physiology are less utilitarian and "applied" than might be, and even pathology is acquiring the character of a special subject instead of remaining an integral part of medicine. There is a lack of cooperation between teachers in the various periods and the various subjects. Many teachers of anatomy, physiology and pathology instruct their students as though they too were destined to become anatomists, physiologists and pathologists, whereas nine out of ten will be physicians. Many clinicians adopt too low a standard in the study of evidence or, forgetful of the contributions of physiology to bedside medicine, neglect their opportunities of encouraging thoughtful applications of earlier training to the everyday problems of practice.

Dr. Ryle holds that our present failure lies in the following: Only three years out of the present six or seven is at present

devoted to clinical study. We are insisting more and more on training in what may be called the "experimental method" and less and less in the "observational method." Both are essential, but they should be complemental. No amount of education in physiology, pathology, bacteriology, biochemistry and radiology will ever make a physician. In these subjects, less detail, more broad principle and more applied study are needed. From a much earlier stage and in many ways closer contact is needed with the patient and the problems of the "living disease."

Disuse of Alcohol in the Treatment of Fevers

In England the use of alcohol in the treatment of disease has much diminished in recent years, but few physicians will probably go to the length of complete disuse, as shown in the report of Dr. J. D. Rolleston, medical superintendent of the Western Fever Hospital, London. More than a quarter of a century ago he abandoned the therapeutic use of alcohol, and on his appointment as superintendent he persuaded his colleagues to cease to prescribe it. In the Western Fever Hospital nearly 2,600 ounces of brandy was consumed in 1925; this figure fell after Dr. Rolleston's appointment in 1926 to 25 ounces in 1927, 1 ounce in 1928, and none in 1929 and 1930. In the eight other fever hospitals of London, alcohol is still used freely, especially in the treatment of diphtheria, typhoid and the bronchopneumonia of measles and whooping cough, though no statistics are available. Throughout the four years 1927-1930 the case mortality from these diseases, and also from scarlet fever, was in nearly every case lower in the Western than in the eight other fever hospitals. In 1927 and 1928, in neither of which years was alcohol used in the treatment of diphtheria, the case mortality at the Western Hospital was the lowest in the nine fever hospitals of London. Dr. Rolleston concludes not only that the recovery rate was not lowered by the omission of alcohol but also that convalescence was as rapid as in the cases treated with various alcoholic beverages in the other hospitals. The loyal cooperation of his staff enabled Dr. Rolleston's experiment to be carried out without much difficulty, but he remarks that at first considerable misgivings were entertained by some of the older members of the nursing staff. In the ambulance for the conveying of patients to the fever hospital, brandy has continued to be supplied for use on the journey. The nurses have not been forbidden to use it but have been ordered to give a report of every case in which they considered its administration necessary. The result of this order has been that since Jan. 1, 1927, only 3 ounces and 3 drachms has been used up to the time of the report (Nov. 1, 1931), during which period many thousands of patients have been conveyed. The nurses have now become so convinced that brandy is unnecessary that no brandy or other form of alcohol has been used in the ambulance service of the Western Hospital since May 17, 1928, when 2 drachms was given to a smallpox patient.

Action Against a Surgeon for Not Removing the Appendix

An action against a surgeon on unusual grounds illustrates once again the legal risks run by operators though no fault is committed. A surgeon operated on a child for appendicitis and stated that he removed the appendix. Four months later it was found that the appendix was still causing trouble and another surgeon operated, found the appendix and removed it. An action was therefore brought against the first surgeon for negligence in performing his operation. The second surgeon stated that he removed an appendix 3½ inches long, with two perforations, and that there was no sign of a stump or of previous intervention on the appendix. He admitted that it was very difficult to be certain of the appendix when the tissues were matted together. A pathologist gave evidence that in his opinion the tip was that of the original appendix and not a stump after part had been removed. For the defense the first surgeon stated that he had performed between 2,000 and 3,000 operations for appendicitis. The child was in a dangerous condition and he had operated on her within two hours of making the examination. He found a mass of adhesions in which it was impossible to distinguish the appendix, but on enlarging the opening he found the tip of the appendix, which was gangrenous and perforated. The appendix appeared to be attached at 4½ inches from the tip to the large intestine, and he cut it off at this point. As he found it impossible to invaginate the stump, he tied a ligature around it and left it. Two eminent surgeons gave evidence for the defendant. Sir Charles Gordon-Watson said that, judging by the evidence, the first surgeon had done the right thing. In a case of abscess of the appendix, the first essential was to drain it; and when there were adhesions, it might be impossible to find it. Mr. V. Warren Low gave evidence to the same effect. After this evidence the allegation of negligence was withdrawn and the parents handsomely acknowledged that they recognized the difficulties that the operating surgeon had to encounter and appreciated that he had saved the child's life. Further evidence could have been given, but was not necessary, by a physician present at the operation and the nurse that they had seen the appendix after removal. The clash of evidence as to the removal of the appendix at the first operation was not explained.

An Eight-Hour Day for Nurses Refused

An eight-hour day is part of the labor program and its leaders would like to make it universal except when they are able to enforce still shorter hours. The matter has just come before the Central Public Health Committee of the London County Council, which controls all the municipal hospitals of the metropolis. The committee is opposed to an eight-hour day for its probationer nurses, as this would involve serious disadvantages to the probationers themselves, on account of the impossibility of providing satisfactory training in clinical observation of acutely ill patients. This would follow from the probationers being continuously absent from the wards for a consecutive period of sixteen hours. The committee also holds that probationers should live on the hospital premises. It considers that it would be unwise to allow young persons to live in lodgings without supervision.

PARIS

(From Our Regular Correspondent)

March 9, 1932.

Mortality Among Wards of the State

Children abandoned in the hôpitaux de Paris by their parents immediately after birth are turned over to the Assistance publique parisienne. Most of these children are illegitimate. The administration of the Assistance publique distributes them throughout the various departments of France, placing them in the hands of women who use, in some instances, breast feeding but more commonly artificial feeding. A periodic supervision is exercised over these nurses by the regional physicians appointed for this purpose. In spite of this supervision, which is likely to be somewhat superficial, the mortality of these children, particularly from gastro-enteritis, has been high, exceeding 60 per cent. The medical supervision was improved, with the result that the mortality was reduced to between 30 and 40 per cent. In 1920, *centres d'élevage*, or child-raising centers, were established. That is to say, the children were concentrated in villages, in which the peasant women agreed to devote themselves to this child-raising industry, under the direction of a physician residing therein and watching daily to see that the principles of puericulture are applied. Under this system, the mortality dropped, after 1922, to 15.77 per cent. A distinct step forward was accomplished by Dr. Mourier, director of the Assistance publique in Paris, who created at Antony, at the gates of Paris, a so-called center of adaptation, which is a veritable school of puericulture,

where the children, before being sent to the provincial child-rearing stations, are first breast fed and then gradually accustomed to cow's milk, not leaving the establishment until they are completely adapted to cow's milk, experience having long since shown that deaths from gastro-enteritis are relatively frequent during the period of transition from one type of food to the other. The mortality of these wards of the state has dropped from 9.42 per cent in 1928 to 4.52 per cent in 1932. The excellent results achieved since introduction of the new system can thus be appreciated. Mr. Mourier has recently made them known in a report addressed to the Academy of Medicine. In the *centres d'élevage*, the mortality was 15 per cent in 1924 and 11.75 in 1927, the year in which the center for the adaptation to cow's milk was established at Antony. The mortality is today 4.40 per cent, or much lower than that of children brought up in their own families. This mortality rate is based on the totality of children, among which figure many athreptic, weakly and abnormal children, descendants of persons who were syphilitic and addicted to alcohol. If one studies especially the mortality from gastro-enteritis, on which the diet has the greatest influence, one finds that it furnished, in the children under 1 year of age, 71 cases in 1924; after the creation of the center at Antony, in 1927, 29, and in 1930, 7 cases, in an average annual total of 1,200 children. Thus, through the influence of the new organization—combination of the *centres d'élevage* and the adaptation center—gastro-enteritis, which, previous to 1926, caused so many deaths among the abandoned infants of Paris and the department of the Seine, has practically disappeared.

Necropsies in Deaths Due to Accidents

The Société de médecine légale devoted recently an important discussion to the subject of the need of necropsy in all accidental deaths, after the presentation of a communication by Mr. Fauquez in which he emphasized the fact that, after five cases of death attributed to occupational accidents, and for which an indemnity and a pension were demanded, there was a case of double pneumonia, a case of thrombosis of the mesenteric vessels, two cases of cerebral tumor, and one case of infectious endocarditis with suppurative meningitis. These cases furnish further proof how great the tolerance for large organic lesions may be, in certain subjects. In these cases, the only relation between the death of the subject and the traumatism or occupational intoxication was that the traumatism coincided in point of time with the appearance of the disease. No demonstration of the past personal history is possible in such cases and one will always be inclined to incriminate the accident. Mr. Lyon-Caen remarked, in this connection, that a necropsy should likewise be performed when death results following an accident under common law. He recalled a previous communication that he submitted to the society, in collaboration with Mr. Piédelièvre, on two cases in which death following automobile accidents was caused in reality by cerebral tumors. Mr. Leclercq held that a necropsy should be systematically and uniformly performed in all cases in which there is a suspicion of traumatism as a cause of death. He remarked that often judges hesitate too long in ordering a necropsy, demanding it after it is too late, which sometimes makes it difficult to reach definite conclusions. In civil suits, the court often hesitates, for reasons of economy, to order a necropsy. The medical examination is sometimes confined to a simple inspection of the superficial lesions, which furnishes only vague indications. Mr. Duvoir emphasized the great importance of necropsy in civil suits, in which the previous condition of the victim may be taken into consideration. Mr. Crouzon remarked that in the Hôpitaux de Paris necropsy is discouraged by an automatic medicolegal opposition in all cases in which death follows an accident. Duvoir brought out that that is due to judicial opposition and is designed to safeguard the rights of justice. The transfer of the body to the medicolegal institute for the purpose of a necropsy ought to be the natural consequence; but such transfer is made only on special requisition, and the police commissioner issues a burial permit if a necropsy is not ordered. Thus the hospital physicians do not get a chance to perform a necropsy.

Academy Approves Restrictions on Dispensing of Alcoholic Beverages

Alcoholism, which had greatly diminished during the years immediately following the war, partly under the influence of the high cost of living, is now again increasing, slowly but steadily. The alcoholism that comes from the consumption of wine, beer or cider is not so dangerous, because it cannot exceed certain limits. Furthermore, the consumption of wine is decreasing and the wine growers are complaining bitterly. The danger lies chiefly in the countless alcoholic liqueurs sold in the barrooms under the misleading name of aperients and consumed by the middle class at the bars and in the tea rooms under the name of cocktails. These are much in vogue at present and cause a great deal of organic disease, while the physicians are powerless to stem the tide. Mr. Sieur interested himself in the question and transmitted a communication on the subject to the Academy of Medicine, which unanimously endorsed the following resolution:

> The Academy supports the resolution that (1) parliament, taking account of the grave moral dangers that lie in the excessive consumption of alcoholic beverages and the bad effects on health and economic conditions caused by alcoholism in all classes of society, should promulgate the necessary regulations to reduce, as far as possible and as soon as possible, the consumption of such beverages; (2) until such time as new legislation can be passed, the minister of public health should urge the prefects and the municipalities to apply rigorously to all establishments dispensing alcoholic beverages the laws, decrees and regulations that are at present in force and to refuse to grant any further licenses, and (3) it be prohibited to serve in barrooms, of whatever type they may be, alcoholic beverages to children under 16 years of age, to be consumed on the premises. Suitable penalties for violation should be provided.

The following paragraph was added at the request of Prof. Marcel Labbé:

> There should be opened in all parts of France soft drink parlors, after the pattern of those that exist in the seaports and in cities where troops are quartered, under the name of *abris du marin* and *foyers du soldat*.

The Senate Bill Pertaining to the Prenuptial Certificate

For a number of years, long discussions have been carried on in various learned societies, and even in the Union des syndicats médicaux, on the desirability and feasibility of requiring applicants for a marriage license to furnish evidence, in the form of a certificate signed by a physician, that they are not affected with a contagious disease. It has been thought possible, in this manner, to check especially the dissemination of the two diseases that are transmitted most commonly through the neglect of such precautions—syphilis and gonorrhea—which, owing to their attacks on the human race at its source, justify intervention on the part of the public authorities. But, while all were agreed as to the utility of such a measure, many physicians saw in this proposal a serious attack on the right of privileged communication. Dr. Schreiber proposed, before the Société d'eugénique, a solution, which fulfils the object sought, while taking account, at the same time, of various sensibilities. His suggestion has been adopted by the Syndicat des médecins de la Seine and the socialist party of the public health service. Mr. Justin Godart, president of that bloc, formerly minister of health and senator from the department of the Rhone, has prepared a bill incorporating the idea, which he has submitted to the senate, and it seems likely to be accepted without much debate. Its aspirations are modest, but it might nevertheless bring about considerable progress. The bill provides that "before proceeding with the marriage ceremony, the civil magistrate shall demand, from each of the future spouses, a certificate, issued within the previous thirty days, by a physician and specifying that the future spouse has been examined by him with a view to entering on the marital relation." This will

not violate the right of privileged communication, yet it is clear that if a fiancé with a contagious disease has been unable to secure from a physician such a certificate, the proof of the existence of his disease is brought and renders thus the marriage impossible. There is, to be sure, a possibility that a physician, devoid of conscience, might allow himself to be bribed, or that an ignorant physician might commit a grave professional error. But, if that should happen, a spouse, becoming infected owing to such perfidy or negligence, would have a legal recourse against the physician who had signed such a certificate. Moreover, the very vagueness of the statement in the certificate makes its possible to eliminate not only venereal diseases but also other disorders no less grave for the future of the new family.

BERLIN

(From Our Regular Correspondent)

March 7, 1932.

The Attitude of Women Physicians Toward the Abortion Question

In recent letters, reference has been made to the problem of induced abortion, a question that has awakened great interest in the medical profession of Germany because a new penal code is being prepared (THE JOURNAL, March 23, 1931, p. 1810). In the meantime, the league of women physicians submitted a questionnaire to all German graduate women physicians, in order to learn their attitude toward the interruption of pregnancy. The results of this inquiry have now been published in the organ of the league. Of 2,836 questionnaires sent out, 2,761 were returned with answers, 1,352 of which were of a nature to be utilized. Only 6.4 per cent of the members of the league favored retention of the existing section of the penal code; 20.9 per cent were for abolition and 7.27 per cent for revision. The chief interest attaches naturally to the question whether or not a change is desired and what the nature of the change should be. One of the questions in the questionnaire was as to whether legal recognition of medical indications for abortion, taking account of the life, the health and the capacity of the woman, is desirable. Although all members favored recognition of the medical indications for the interruption of pregnancy, taking account of the life of the woman, 96 per cent favored considering also the capacity of the woman.

The central idea of the inquiry concerned the legal recognition of the sociomedical indications; that is, consideration of the financial or social position in case of doubtful medical indications. The purely financial indications were favored unreservedly by 32.8 per cent and conditionally by 24 per cent, while 37.2 per cent and 5.9 per cent, respectively, failed to vote on these two questions. Of the 559 favoring the purely social indications, 50 advocated leaving the decision to a single physician, 143 favored a decision reached by the attending physician and a consultant, and 233 suggested the submitting of such questions to a committee.

As for the indications for abortion in pregnancy resulting from incest, 72.9 per cent favored the recognition of such indications, 9.8 per cent conditionally, while 10 per cent were opposed to such recognition. For the admissibility of interruption in case of a too rapid succession of pregnancies, 36.9 per cent voted unreservedly and 10.8 per cent conditionally, while 38 per cent opposed interruption on such grounds. Admissibility of interruption of pregnancy in the presence of a definite number of children was favored by 28.2 per cent; conditionally, by 10.6 per cent, while 45 per cent were opposed to such recognition. The admissibility of interruption of pregnancy in the juvenile age was favored by 36.3 per cent, conditionally by 8.8 per cent, while 37.5 per cent were opposed. The abolition of the section on abortion is demanded to a great extent by the women physicians of the large cities. With reference to the carrying out of abortion, there were many reservations expressed against allowing a single physician the right to decide the matter. A comparison of the results of the inquiry in Hamburg and among the women physicians of Germany revealed that among the women physicians the tendency toward a liberal interpretation of section 218 is more marked than among the medical profession of Hamburg (THE JOURNAL, June 6, 1931, p. 1970).

The Road to Crime

The customary phrases "financial distress," "society's share in the guilt," and "hereditary tendencies" do not exhaust the causes of crime. A deeper insight into the nature of the antisocial members of society can be obtained only by studying carefully the personality of the individual criminal—and particularly by applying the methods of individual psychology. This subject was discussed recently by Alfred Adler of Vienna before the Gesellschaft zur Förderung individualpsychologischer Arbeit in Berlin. Financial distress as a cause of crime, he said, must be recognized, although (in the United States, for example) in times of the greatest prosperity, criminality is often scarcely less than during unfavorable conditions. Society's share in the guilt, it is found on study of the lives of criminals, may be reduced to the mistaken methods of the educators of their early youth—stern fathers, coddling mothers and an environment that commits pedagogic errors and does not understand how to develop the social sense in the growing child. The wide-awake children who are allowed to have their way too much, who are overindulged and whose acts are not supervised, so that they do not learn to consider others, easily get into evil ways. Accustomed to have their own way and to have all their desires promptly satisfied, they lack the ability to adapt themselves to their surroundings. Adler attaches special importance to the fact that a large percentage of criminals are unskilled workers, in which class he includes also unskilled mental workers, and not merely unskilled manual laborers. He means all those who are insufficiently prepared for life and who lack the capacity to make a place for themselves in the sociological structure, because they were not given the necessary training in their early youth. The ordinary methods of combating crime, as employed by the state, the police and the courts, are always inadequate; for little or nothing is done to reduce the supply of criminals at the source, in early youth. This statement will not be accepted by those who assign to hereditary tendencies a decisive influence in the evolution of the criminal character; for hereditary tendencies are not so readily controlled. Adler does not regard recidivation in criminals as necessarily an evidence of the controlling influence of hereditary factors, but it may be rather due to the facts that the criminal can move only within a narrow range of action, and that he yields to the slightest pressure from the outer world (evil associates), without trying consistently to conduct himself as a useful member of society. He follows his early instinct that has always driven him to accomplish his purpose at any cost, and gives no consideration to the just interests and demands of his environment. Recent researches on twins have revived the thesis of the "born criminal" but have overlooked, Adler thinks, the fact that twins are usually subjected to the same environmental influences and receive the same home training and education.

Twentieth Anniversary of the Berlin Urologic Society

The Berliner Urologische Gesellschaft held recently a special session on the occasion of the twentieth anniversary of its founding. The president, Professor von Lichtenberg, discussed the scope of urology and pointed out its connection with medical science as a whole. Sanitätsrat Dr. Arthur Lewin of Berlin, Professor Thomson of London and Prof. Dr. McCarthy of New York were chosen honorary members of the society. The Nestor of Berlin urologists, Prof. Leopold Casper, delivered the commemorative address. He gave an historical survey of the development of urology from ancient times on

down to Bright, Nélaton, Mercier and Simon (who performed the first kidney extirpation). He referred to Nitze, the inventor of the cystoscope, as the reformer of urology. Casper demanded better opportunities for training. Special studies in urology must be preceded by thorough training in internal medicine and surgery.

The Influence of Seasons on Disease

The connection between seasons and diseases has often been studied, and the strong influence of the weather on certain disorders, such as colds and rheumatic conditions, is established beyond all doubt. The influence of the seasons on cutaneous disorders is no less important, as Dr. F. Stern points out in the *Deutsche medizinische Wochenschrift,* on the basis of recent researches. The sufferer from certain skin diseases is best off in summer, whereas spring is the most critical season. This observation corresponds to that in a large number of other diseases. The exacerbations or the reappearance of eruptions in spring is connected with the increased effulgence of light as the sun mounts higher in the heavens, as well as with the increasing wealth of ultraviolet rays. In addition, other weather factors play a part, such as air pressure, wind currents, precipitations, moisture, air contaminations and also the ionization conditions. These things have not been sufficiently investigated, but it has been shown particularly in eczemas that the increased prevalence of skin disorders in the spring is connected with rapid changes in the weather and strong winds that fill the air with dust and are associated with a comparatively low moisture of the air. In violent manifestations of the weather an unrest in the capillaries has been observed, especially in connection with thunderstorms. The fluctuations in the vascular system of man are apparently caused by the seasons. One observes, in summer, distended capillaries through which the blood courses unevenly and rapidly but which change toward the end of the year. The small blood vessels of the skin then become narrower, and the passage of the blood is slower and less uneven. With the opening of spring, however, the circulation again suddenly becomes stronger and a distention of the vessels is again manifest. The adaptation that thereby becomes necessary may influence skin diseases. The ability to adapt oneself in the spring is not always the same. Whereas the transition from the winter to the summer status in healthy persons is accomplished in a uniform and harmonious manner, in others irregularities and disturbances occur, so that distentions of the blood vessels alternate rapidly with spasms of the blood vessels. The irregularity of the blood circulation thereby produced may interfere with the healing of skin diseases, or, in the event of a predisposition, may elicit new attacks. Besides the weather, the changing diet during the course of the seasons plays a not unimportant part in the genesis and course of skin disorders. The diet in winter is usually poorer than in spring. The fresh foods rich in vitamins are lacking. Milk and butter are changed in their composition and their vitamin content, owing to the winter feeding of the stock. The irritability of the skin is influenced by the diet, as experiments have shown. It has been shown, also, that animals fed green foods have a much less sensitive skin than animals fed on drier rations such as are usually fed in winter. This hypersensitiveness of the skin, which arises in winter as a result of the diet, is, however, of the greatest significance for the appearance of certain skin diseases. If one asks as to the inner reasons for this seasonal influence, the metabolism of the mineral substances must be especially considered. It is well known that the growth of hair and nails in man is increased in the spring. A parallel in the animal world is found in the changes in the thickness of the fur. There is doubtless a connection with the activity of the glands of internal secretion, which is increased in spring, as is clearly evident in the case of hibernating animals. This increase of glandular activity and the irritability of the vegetative nervous system in the spring must likewise be taken into account in judging the disorders that appear. As to the influence exerted by the season on the metabolism of mineral substances of the skin, the results of researches in this field are not so unequivocal. The connections brought out in the foregoing paragraphs are important for the treatment of many skin disorders. Thus, in lupus, which is a terrible disease, the exacerbations in winter and the improvements in summer are striking. As these fluctuations were ascribed to changes in the diet, an endeavor has been made to provide for lupus patients a diet as rich as possible in vitamins and to supplement this diet by treatment with artificial light generators corresponding to the effulgence of light in summer. Also the increased activity of the glands of internal secretion in spring and summer is assigned as a reason for the improvement of lupus and has led to the treatment with thyroid preparations, from which some satisfactory results have been secured.

Possible Injuries of Posterity by Irradiation

At a joint session of the Bayerische Gesellschaft für Geburtshilfe und Frauenheilkunde and the Bayerische Gesellschaft für Röntgenologie und Radiologie, held in Munich, February 6 and 7, the question of the injury of posterity through the application of roentgen or radium rays was discussed in detail by gynecologists, roentgenologists and eugenists. The following resolution was adopted by the two societies:

> The resolution of the Deutsche Gesellschaft für Vererbungswissenschaft and of the Deutsche Gesellschaft für Rassenhygiene, adopted at their session of Sept. 17 and 18, 1931, held in Munich to deal with this question (THE JOURNAL, Nov. 21, 1931, p. 1552), is based exclusively on experimental researches on insects and plants. The experimental conditions under which these researches were carried on cannot and must not be compared, either qualitatively or quantitatively, with the conditions under which the rays are applied to man. Since, then, the bases for such a resolution are lacking, we reject the resolution, especially as all the available observations on mammals and on man point in the opposite direction. The aforementioned resolution of 1931 endangers most seriously the present status and the further development of the indispensable and irreplaceable diagnostic and therapeutic application of roentgen rays to the abdominal region of both man and woman. The resolution may do untold damage also by giving rise to civil and criminal lawsuits against physicians. We regard it therefore as our duty to call attention, in a most emphatic manner, to the results that may follow the resolution, and urge the two societies in question to reconsider the resolution in the light of the considerations herein stated.

NETHERLANDS

(From Our Regular Correspondent)

March 3, 1932.

Smallpox Without Exanthem

Dr. De Jongh of The Hague gave a detailed account in the *Klinische Wochenschrift,* Oct. 25, 1930, of the epidemic of smallpox that raged in the Netherlands in 1929. The epidemic was started by a sailor who returned from the East Indies with smallpox, from which he had partially recovered, and gave rise to a total of 318 cases at Rotterdam and 62 at The Hague, where the patients were cared for in an isolation hospital by 42 women nurses. One of the nurses came down with the disease, with a slight but frank exanthem, and twelve nurses had smallpox without exanthem. Most of the patients had been revaccinated a short time before they took care of the smallpox patients. There is reason to think that they presented an allergic reaction toward the smallpox virus. This idea is borne out by the shortness of the incubation period (from eight to ten days in place of thirteen to fourteen days, as in smallpox). From the point of view of contamination, it was the mucosa of the pharynx that proved most readily affected. The patients who coughed a great deal occasioned, even though they had few pustules, a rather marked propagation of the infection, and four physicians who, at the start, had examined the throats of patients without taking special precautions had contracted the disease. The subjects affected with smallpox without exanthem proved to be contagious. When the patient was, from the start, sufficiently ill to stay in bed, and when he was cared for only by persons properly vaccinated, there was no propagation of the infection; but six patients of De Jongh, who continued going and coming, in spite of their disease, occasioned six new cases, two of which were

ordinary smallpox and four smallpox without exanthem. The prognosis of smallpox without exanthem is favorable. All the patients recovered rapidly, although there was persistence of feeling of weakness for a long time in many of them. But that is not always the case. De Jongh reported the case of a man, aged 27, who, after recovery from smallpox without exanthem, was attacked with manifestations of paralysis of both legs and of the bladder, soon contracted bed sores, and died at the end of two months. The necropsy confirmed the diagnosis of myelitis caused by the smallpox.

The Federation of Eugenics

The Netherlands Federation of Eugenics comprises the national bureau of anthropology, the Netherlands society of genetics, the Netherlands national committee for demographic study, the eugenics society of the Dutch East Indies and the institute of preventive medicine. The federation, which has a large membership, is carrying on an energetic campaign in favor of prenuptial medical examination and periodic medical examination. Periodic medical consultations have been opened at Amsterdam, The Hague, Rotterdam and Leyden, and more than eighty communes are distributing leaflets to applicants for marriage licenses. These organizations function with the collaboration of the central government, more than 100 municipalities, and more than 1,500 church societies. Every prenuptial examination requires the services of three physicians, each of whom is a specialist, the first in general medicine, the second in gynecologic disorders, and the third in venereal diseases.

Plans for Organization by the Red Cross of First Aid

It is planned to divide each province into districts, with a communal medical service or a sanatorium as a center. Each center would include medical services and public health services, hospitals, surgeons and physicians, men and women nurses, and auto-ambulances. In each province there would be (1) communes with (*a*) a first-aid crew, (*b*) a transportation crew, and (*c*) large first-aid kits; (2) communes with (*a*) a few aids, (*b*) a stretcher, and (*c*) a small first-aid kit, and (3) railway stations with a large first-aid kit and stretchers. The first-aid station would be a house with a telephone available day and night. A list of available physicians would be posted, also the names of the first-aid crew, the house where the first-aid kit may be found would be announced, and information would be posted as to the location of the nearest ambulance and the nearest hospital, and where a pastor could be secured. Along the highways, the guide-posts would give information as to the nearest first-aid station. A book also would be published, giving information as to the location of all first-aid stations in each commune (for the use of automobilists and motorcyclists). In case of a serious accident, the head of the district would be called on the telephone and asked to send aid. The Red Cross has established, along the principal highways of the Netherlands, telephone stations that are open day and night.

Marriages

JAMES WILBERT LOVE, Cleveland, to Miss Mabel Tompson of Welshpool, Montgomeryshire, England, April 10.

ALPHONS E. BACHHUBER, JR., Mayville, Wis., to Miss Priscilla Haessly of Theresa, April 2.

CHARLES B. GAWNE, Oak Park, Ill., to Miss Loretta Josephine Wetzel of Chicago, March 29.

GEORGE X. LEVITT to Miss Evelyn J. May, both of New York, at Millerton, N. Y., April 10.

HUNTER LEDBETTER SCALES to Mrs. Julia Hull Brown, both of Starkville, Miss., recently.

FRED W. CAUDILL to Miss Edna Snyder, both of Hazard, Ky., at Lexington, in March.

FRANCIS J. FITZPATRICK to Miss Esther Vielkind, both of Pontiac, Mich., recently.

Deaths

Wilbur Fisk Thomson ⊕ Beaumont, Texas; Tulane University of Louisiana Medical Department, New Orleans, 1906; member of the American Society of Clinical Pathologists; past president of the Jefferson County Medical Society; veteran of the Spanish-American and World wars; on the staff of the Hotel Dieu Hospital; aged 58; died, February 22, of coronary thrombosis and cholecystitis.

Stephen Smith Burt, New York; College of Physicians and Surgeons in the City of New York, 1875; member of the Medical Society of the State of New York; emeritus professor of medicine, New York Post-Graduate Medical School and Hospital; aged 81; died, March 26, in the Roosevelt Hospital, of burns received when his clothing was ignited by a match.

Hamilton Pope Calmes, San Antonio, Texas; University of Tennessee College of Medicine, Memphis, 1916; member of the State Medical Association of Texas; served during the World War; formerly a captain in the M. C., U. S. Army; aged 41; died, March 20, in the Medical and Surgical Hospital, of cirrhosis of the liver.

Chester W. Hubbard ⊕ Mason City, Iowa; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; president of the Cerro Gordo County Medical Society; on the staff of the Park Hospital; aged 55; died, March 20, of cerebral hemorrhage.

Margaret Hughes Bynon ⊕ North Madison, Ind.; Woman's Medical College of Pennsylvania, Philadelphia, 1902; member of the Medical Society of the State of Pennsylvania; on the staff of the Madison State Hospital; aged 60; died, April 3, in the King's Daughters' Hospital.

Arnold Cohen, Cleveland; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, 1898; member of the Ohio State Medical Association; aged 59; died, April 5, in St. Luke's Hospital, of bilateral mastoiditis and bilateral sinus thrombosis.

Joseph Adolph Frisz, Terre Haute, Ind.; University of Indianapolis Medical Department, 1900; member of the Indiana State Medical Association; police surgeon; served during the World War; on the staff of St. Anthony's Hospital; aged 54; died, April 1, of heart disease.

Emanuel Marx Robinson ⊕ Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1903; aged 57; on the staffs of the Kingston Avenue Hospital and the Beth-El Hospital, where he died, March 27, of carcinoma of the stomach.

Charles Paul Durney ⊕ San Jose, Calif.; Georgetown University School of Medicine, Washington, D. C., 1909; medical superintendent of the Alum Rock Sanatorium; aged 45; was found dead in his garage, March 20, of carbon monoxide poisoning.

Wilson Eugene Hunt, Malden, Mass.; Harvard University Medical School, Boston, 1902; member of the Massachusetts Medical Society; on the staff of the Malden Hospital; aged 56; died suddenly, March 30, of heart disease and coronary sclerosis.

Charles V. Garver ⊕ Lorain, Ohio; Western Reserve University Medical Department, Cleveland, 1902; formerly county coroner; on the staff of St. Joseph's Hospital; aged 56; died, March 25, in the City Hospital, Cleveland, of heart disease.

Charles L. H. Hintzelmann, Cleveland; University of Wooster Medical Department, Cleveland, 1878; aged 80; died, March 2, at the Lutheran Hospital, of hypostatic pneumonia, following a fracture of the neck of the femur due to a fall.

James Augustine Farrell, St. Louis; St. Louis College of Physicians and Surgeons, 1917; served during the World War; assistant diagnostician in the health department; aged 40; died, March 21, in the Missouri Baptist Hospital, of pneumonia.

James Lee Hopkins, Havre De Grace, Md.; University of Maryland School of Medicine, Baltimore, 1897; member of the Medical and Chirurgical Faculty of Maryland; aged 59; died, March 28, in a local hospital, of lobar pneumonia.

Creed Calvin Calbreath, Chariton, Iowa; Keokuk (Iowa) Medical College, 1892; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1897; aged 64; died, March 26, of chronic nephritis.

Clyde Weitess Hamlin ⊕ Palmyra, Mo.; Barnes Medical College, St. Louis, 1911; president of the Marion County Medical Society; formerly member of the school board; aged 49; died, March 6, in Hannibal, of pneumonia.

Herman Rosenberg, New York; Cornell University Medical College, New York, 1903; member of the Medical Society of the State of New York; aged 56; was found dead, March 18, of accidental carbon monoxide poisoning.

Dana Howard Garen, Chicago; Northwestern University Medical School, Chicago, 1892; member of the Illinois State Medical Society; on the staff of the Englewood Hospital; aged 64; died, March 22, of angina pectoris.

Isadore Mordecai Cherniak, Windsor, Ont., Canada; Detroit College of Medicine and Surgery, 1917; Western University Faculty of Medicine, London, 1918; aged 37; died, March 15, in the Harper Hospital, Detroit.

William Charles Heussy ⊕ Seattle; University of Buffalo School of Medicine, 1895; fellow of the American College of Physicians; aged 62; died, March 21, following an operation for obstruction of the common bile duct.

John J. Metzinger, Fremont, Neb.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1899; member of the Nebraska State Medical Association; aged 55; died, February 4, of cerebral hemorrhage.

George L. Turner, Monroe City, Mo.; Rush Medical College, Chicago, 1880; aged 78; died, March 15, in the Missouri Baptist Hospital, St. Louis, of uremia, chronic interstitial nephritis and prostatic hypertrophy.

John Henry Houton, Flint, Mich.; Michigan College of Medicine and Surgery, Detroit, 1904; member of the Michigan State Medical Society; served during the World War; aged 58; died, April 3, of heart disease.

Emerson E. Evans, Fort Morgan, Colo.; Kansas Medical College, Topeka, 1894; member of the Colorado State Medical Society; on the staff of the Fort Morgan Hospital; aged 67; died, March 23, of pneumonia.

Sidney Herman Adler ⊕ New York; University of Maryland School of Medicine, Baltimore, 1907; on the staff of the French Hospital; aged 48; died, March 12, of angina pectoris and coronary sclerosis.

Robert John Thiel, St. Louis; St. Louis University School of Medicine, 1931; aged 26; intern, St. Mary's Hospital, where he died, March 22, following an operation for appendicitis and mesenteric thrombosis.

James Charles Wilson ⊕ Rockwood, Tenn.; Vanderbilt University School of Medicine, Nashville, 1893; on the staff of the Chamberlain Memorial Hospital; aged 62; died, March 6, of myasthenia gravis.

Margaret E. Simmons, Chicago; Woman's Medical College, Chicago, 1891; aged 79; died, March 4, in the Eastern Star Sanitarium of Illinois, Macon, of arteriosclerosis following a fracture of the hip.

Herman Bamberger, Toledo, Ohio; Kentucky School of Medicine, Louisville, 1898; member of the Ohio State Medical Association; aged 64; died, April 6, of cerebral hemorrhage and arteriosclerosis.

Edward T. Milligan, Santa Monica, Calif.; Michigan College of Medicine and Surgery, Detroit, 1892; member of the California Medical Association; aged 77; died, March 31, of chronic myocarditis.

Edmund Landus Smith, Bedford, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1899; member of the Medical Society of the State of Pennsylvania; aged 66; died, February 29.

Philip Adam Meckel, Jamaica, N. Y.; Long Island College Hospital, Brooklyn, 1931; aged 26; intern at the Mary Immaculate Hospital, where he died, March 16, of pneumonia.

Rollo Joseph Peirce, Richmond, Ind.; University of Indianapolis Medical Department, 1905; served during the World War; aged 59; died, March 23, of organic heart disease.

George L. Roe, Beatrice, Neb.; Louisville (Ky.) Medical College, 1879; member of the Nebraska State Medical Association; aged 77; died, March 8, of heart disease.

Charles Fremont Lewis, Austin, Minn.; Vanderbilt University School of Medicine, Nashville, Tenn., 1900; aged 64; died, March 8, of multiple myeloma of the bones.

Rolla Emerson Shaver ⊕ Buffalo; University of Buffalo School of Medicine, 1915; aged 46; died, March 24, in the Buffalo General Hospital, of coronary embolus.

Robert Leonard Boon, Bentonsport, Iowa; Rush Medical College, Chicago, 1880; aged 82; died, March 21, in the Soldiers' Home, Marshalltown, of arteriosclerosis.

Casper Quinton West, Greenville, S. C.; Atlanta Medical College, 1891; aged 63; died, March 7, in a local hospital, of myocarditis and acute dilatation of the heart.

Rose C. McFall, San Diego, Calif.; Indiana Eclectic Medical College, Indianapolis, 1888; aged 81; died, February 6, of uremia, arteriosclerosis and heart disease.

Gabriel M. Saliba, Savannah, Ga.; University of Tennessee Medical Department, Nashville, 1906; also a dentist; aged 49; died, March 21, of heart disease.

William N. Clark, Grayslake, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1896; aged 62; died, March 17, in the Lake County Hospital, Waukegan.

Louis Frank Cummings, Hopkinton, Iowa; State University of Iowa College of Medicine, Iowa City, 1884; aged 70; died, March 20, of cerebral hemorrhage.

J. Thomas Galbreath, Delta, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1894; aged 63; died suddenly, March 19, of heart disease.

Parker Burdell Robinson, Toledo, Ohio; Northwestern University School of Medicine, Chicago, 1904; aged 56; died, March 21, of angina pectoris.

Marion L. Chadman, Lancaster, Pa.; Cincinnati College of Medicine and Surgery, 1890; aged 67; died, March 11, of acute dilatation of the heart.

Henry Samuel Pickard ⊕ Delphi Falls, N. Y.; Long Island College Hospital, Brooklyn, 1886; aged 82; died, April 5, of cerebral hemorrhage.

William Palmer Azariah Smith, Columbia, Tenn. Meharry Medical College, Nashville, 1925; aged 47; died, in February, of pulmonary tuberculosis.

Carl J. Elion, Galva, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; aged 83; died, March 17, of cardiovascular renal disease.

Wallace McGeorge, Camden, N. J.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1868; aged 89; died, March 22, of pneumonia.

Robert A. Benson, Evansville, Ind.; Kentucky School of Medicine, Louisville, 1884; aged 72; died, February 22, of cerebral hemorrhage.

Marine S. Bias, Hurricane, W. Va.; University of Louisville (Ky.) School of Medicine, 1887; aged 77; died, February 19, of senility.

Abram Mills Stephenson, Adrian, Mich.; Detroit Medical College, 1876; aged 78; died, February 8, in St. Petersburg, Fla., of pneumonia.

Charles Schultus Throgmorton, Brinkley, Ark. (licensed, Arkansas, 1903); aged 62; died, February 25, of malignancy of the gallbladder.

James Van Buskirk ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1868; aged 87; died, March 19, as the result of a fall.

Samuel Andrew Grier, Harrisburg, N. C. (licensed, North Carolina, 1885); Civil War veteran; aged 90; died, March 18, of pneumonia.

William Thornton Willis, Louisville, Ky.; Hospital College of Medicine, Louisville, 1896; aged 60; died, March 3, of heart disease.

Anna Doyen De Meyer, Miles City, Mont.; Dunham Medical College, Chicago, 1897; aged 65; died, January 22, of heart disease.

David R. Alban ⊕ Columbus, Ohio; Medical College of Ohio, Cincinnati, 1890; aged 68; died, March 16, of cerebral hemorrhage.

Thomas Capers Jones, Cross City, Fla.; Memphis (Tenn.) Hospital Medical College, 1903; aged 53; died, March 14, of tuberculosis.

James E. Sutton, Long Beach, Calif.; Rush Medical College, Chicago, 1866; aged 94; died, March 10, of hypostatic pneumonia.

Joseph Frantz, Waynesboro, Pa.; Jefferson Medical College of Philadelphia, 1878; aged 77; died, March 17, of pneumonia.

Ernest Gordon Crichlow, New York; Tufts College Medical School, Boston, 1929; aged 34; was found dead, January 31.

George W. Walbright ⊕ Metropolis, Ill.; Louisville (Ky.) Medical College, 1890; aged 67; died, March 20, of heart disease.

George Llewellyn Howard, Berry, Ky.; Medical College of Ohio, Cincinnati, 1881; aged 73; died, Dec. 18, 1931.

James M. Shamberger, Toomsuba, Miss.; Medical College of Alabama, Mobile, 1890; aged 76; died, January 1.

Bureau of Investigation

THE FEDERAL TRADE COMMISSION

How This Governmental Agency is Protecting the Public in the Medical Field

Physicians, and even informed laymen, are likely to have the idea that the only national agencies which protect the public against misrepresentation or fraud in the medical field are the Department of Agriculture, through its Food and Drug Administration which enforces the national Food and Drugs Act, and the Post Office Department, which can issue fraud orders debarring fraudulent schemes from the mails. There is, however, another agency that, in some respects, is even more potent than either of those two mentioned, in making for greater honesty in the exploitation of medical or medicinal products—namely, the Federal Trade Commission. This body has the power to investigate and take action on cases that seem to involve, or do involve, what are broadly spoken of as unfair trade practices. Where the Commission finds that such practices are being indulged in it can, and in many instances does, obtain a signed stipulation from the individual or concern involved to cease employing the objectionable methods to which the Commission takes exception. If stipulations cannot be arrived at, the Commission has the power of issuing what is known as a Cease and Desist Order, in which the individual or company is definitely ordered to cease and desist from the objectionable practices.

Where ordinary stipulations are arrived at, the Federal Trade Commission in its bulletins does not, as a rule, give the names of either individuals or firms involved in such stipulations, although this rule is not absolute. In all Cease and Desist Orders, however, not only are the names and addresses of the concerns dealt with given, but details of the case are also made public. As an example of a few of the many cases reported, thus far this year, the following are examples taken from the Commission's bulletins:

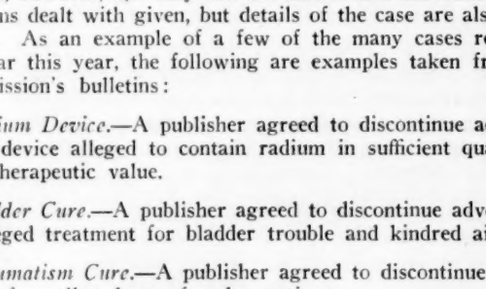
Radium Device.—A publisher agreed to discontinue advertising a device alleged to contain radium in sufficient quality to have therapeutic value.

Bladder Cure.—A publisher agreed to discontinue advertising an alleged treatment for bladder trouble and kindred ailments.

Rheumatism Cure.—A publisher agreed to discontinue advertising of an alleged cure for rheumatism.

Prostate Trouble Device.—A publisher agreed to discontinue carrying advertising matter of an electric appliance alleged to have therapeutic value, a magnetic appliance alleged to be effective in treatment of the prostate gland, and an alleged cure for constipation.

William Davis, Woodbridge, N. J.—This man has agreed to discontinue representing that his treatment will banish moles


Moles
HOW TO REMOVE THEM
A simple, home treatment—25 years success in my practice. Moles dry up and drop off. Write for free Booklet.
WM. DAVIS, M.D., 124-D Grove Ave., Woodbridge, N.J.

or big growths or that it may be safely used other than under the supervision of a physician.

Atlas Medic Company, Buffalo.—This concern agreed to discontinue representing that its treatment would restore sufferers from asthma, catarrh and bronchitis to health, and that use of samples of this preparation would so prove, when such are not the facts.

Rheumatism Cure.—An advertising agency has agreed to discontinue handling advertising matter of an alleged cure for rheumatism.

Radium Ore Device.—A distributor agreed to discontinue representing that the immersion of his "Radium Ore Bar" in water will impart thereto a therapeutic value by virtue of charging the water with radioactivity, when such is not the fact; and to discontinue publishing purported observations of eminent authorities, implying that such authorities endorse the use of water to which has been imparted such radioactive strength as would be imparted by this device, when no such approval has been accorded.

Cloree, New York.—Nell Cameron, trading as Cloree, who sells a cosmetic preparation called "Cloree Lip Reducing Cream," declared she has discontinued all advertising and will

THICK LIPS REDUCED!
(FREE FOLDER TELLS HOW)
Thin, adorable lips is beauty's cry. Cloree's lip-reducing lotion makes unnaturally thick protruding lips, thin, shapely and bewitching. No plasters, rollers or cutting; a simple, painless, harmless lotion. If you value sweet, lovely, alluring lips, start using "Cloree" today and watch results. Particulars free. Send today.
MLLE. CLOREE of NEW YORK,
23 W. 42nd Street. New York, N. Y.

not again advertise this article under that name or any other name.

W. B. Way Company, Kansas City, Mo.—H. W. Barton, trading as W. B. Way Company, advertising and selling an alleged remedy for kidney, bladder or prostate disease, agreed to stop advertising that such ailments can be stopped by use of his remedy, or that the use of the remedy constitutes a competent treatment.

Mlle. Sophia Koppel, New York, N. Y.—This woman who sold a treatment designated "Growdina," for the alleged development of the bust, neck, arms, legs and figure, agreed to

Develops Bust Like Magic!
During the past 17 years thousands have added to their captivating glory of womanhood by using
GROWDINA
for bust, neck or arm development
Great Discovery of Parisian beauty expert. Harmless, easy, certain results accomplished quickly. Marvelous testimonials of efficiency. Confidential proof and literature (sealed) on request. Write now. Mlle. Sophia Koppel, Inc., Suite 179, 503 Fifth Ave., New York

cease advertising (1) that the preparation is a tissue builder, (2) that it was discovered by Mlle. Koppel and (3) that Mlle. Koppel is a famous Parisian beauty culturist. The preparation will no longer be advertised as having a reputation on two continents, or as scientifically prepared, or to be capable of introducing a nourishing, tissue-building food into the flesh.

Dr. C. M. Coe, Inc., St. Louis, Mo.—This advertiser-vendor of a medical treatment for tapeworm, agreed to discontinue all advertising and limit sales to filling unsolicited orders.

Victoria Manufacturing Company, Detroit.—Katherine Stoel, trading as Victoria Manufacturing Company, who sold an alleged treatment for fits, epilepsy and convulsions, has stipulated to discontinue advertising the treatment.

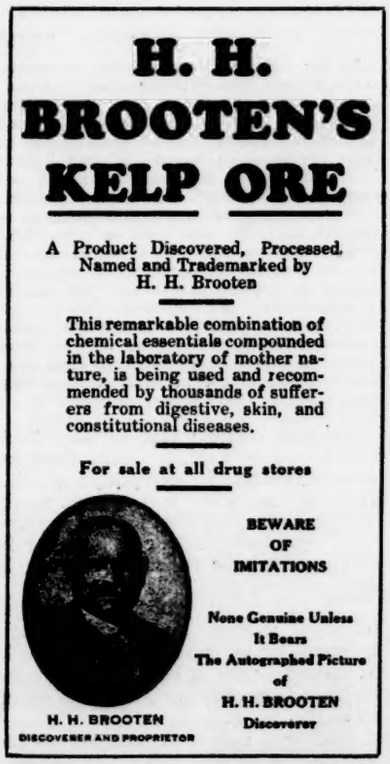
D. D. D. Corporation, Batavia, Ill.—An alleged skin lotion, "D. D. D." will no longer be advertised as efficacious in the treatment of itching skin, unless such statement is qualified to indicate that it does not apply to all cases of itching skin. Nor will it be advertised as a competent treatment for "any form of skin disease," or eczema, ulcers, blotches, pimples, or other skin blemishes, unless the statement is qualified to indicate that it does not apply to all forms of pimples or skin blemishes.

Sunlight V Laboratory, Ramsey, Ill.—A. R. Smith, trading as Sunlight V Laboratory, advertised and sold "Sunlight Hair Tonic." He will cease stating in advertising that application of his preparation to the hair will restore color, or that all shades of color can be obtained from one bottle of it. He will not advertise, further, that the preparation will produce a

natural color to the hair, or restore vigor or luster, or that it is the only product designed for this purpose that is harmless. A. R. Smith also agreed to stop using the word "laboratory" as part of his trade name.

L. Heumann and Company, New York.—Misrepresentation in the sale of "Nerosol," a "nerve medicine," will be discontinued by this concern, according to a stipulation. The company will cease asserting that Nerosol, or the same preparation under another name, will banish or cure nervous disorders. It will no longer be said that Nerosol is effective as a treatment for nerve exhaustion, loss of energy, worry, or sleeplessness, or that it will effect a permanent relief. The product will not be described as compounded or manufactured by Rev. Heumann, or as compounded of ingredients obtained from various parts of the world, unless and until this latter assertion is the truth. The product will no longer be represented as approved by the Government.

Brooten's Kelp Ore.—As an example of the Cease and Desist Order, one was reported recently by the Commission against a concern in Oregon that sold dried clay under "patent medicine" claims. H. H. Brooten and Sons, Inc., of Cloverdale, Oregon, the proprietors of a health resort and the distributors of a product they call Brooten's Kelp Ore, were ordered to cease advertising that their preparation, when used either externally, internally or both, would be of any substantial therapeutic benefit in the treatment of diabetes mellitus, pernicious anemia, tuberculosis, cancer, asthma, or arthritis. The concern was also ordered to discontinue such claims as the statement that Kelp Ore was effective in the treatment of inflammatory and catarrhal conditions of the vaginal tract, or in the treatment of fibroid tumors; that it was of inestimable value in cases of impaired digestion or elimination; that it was an unexcelled antiseptic, and various other claims equally false. The Commission reported that Kelp Ore is a shale-like mineral, which in solid form is a clay containing iron and aluminum sulphates, with a trace of sulphur. When dissolved in water, the solution holds iron and aluminum sulphates, with traces of calcium, magnesium and potassium salts. The Commission further reported, following investigation, that Kelp Ore "is not of any particular therapeutic value, or a substantial remedy, and is not a cure for the diseases mentioned above."


H. H.
BROOTEN'S
KELP ORE
A Product Discovered, Processed, Named and Trademarked by H. H. Brooten
This remarkable combination of chemical essentials compounded in the laboratory of mother nature, is being used and recommended by thousands of sufferers from digestive, skin, and constitutional diseases.
For sale at all drug stores
BEWARE OF IMITATIONS
None Genuine Unless It Bears The Autographed Picture of H. H. BROOTEN Discoverer
H. H. BROOTEN
DISCOVERER AND PROPRIETOR

Anti-Tobacco League, Omaha, Neb.—The following co-partners, trading under the name Anti-Tobacco League: F. A. Flinn, Rex C. Pettegrew, Elmer E. Cram, Mrs. Albert Rasmuss, Mrs. R. W. Flinn, and Miss Helen Bates, vendors of an alleged treatment and remedy for the tobacco habit, have signed a stipulation in which it is admitted that representations heretofore made were incorrect or misleading, and that hereafter the vendors will cease publishing such statements. They will also cease representing that the medicine will stop the tobacco habit, rid one of the craving, overcome the conditions that cause the craving, produce permanent results, or do more than merely aid the user in quitting the habit and in making tobacco temporarily distasteful. The vendors will also stop asserting that the average cigaret smoker becomes emasculated or lacking in vigor; or that one of the most frequent effects of excessive smoking is the gradual failing of eyesight.

Jennie L. Cook Company, Los Angeles, Cal.—C. A. Davis, trading as Jennie L. Cook Company, and selling a bust-developing and restoration treatment consisting of a massage cream called "Orange Flower Flesh Food," a tonic designated "Gland Aid Tablets," and a laxative tablet, will no longer advertise that he is a woman, or that statements made in his literature are from one woman to another, or that Jennie L. Cook Company, or any other enterprise operated by him under any name, is composed of Parisian beauty culturists. The treatment will no longer be advertised as Parisian, French, scientific, made according to a French formula, a constitutional vitalizer, or as a tissue builder. Davis will no longer advertise that by the use of his treatment, a perfect figure can be developed, or that the human body can be properly proportioned and grace be acquired. Various other misrepresentations regarding filling up of hollows in the body, acquiring power or strength, and removing wrinkles, will be discontinued.

Correspondence

MAGGOT TREATMENT OF OSTEOMYELITIS

To the Editor:—Regarding the article by Drs. S. K. Livingston and L. H. Prince on "The Treatment of Chronic Osteomyelitis" (THE JOURNAL, April 2), it may be helpful to the authors to know that what they term "maggot active principle" was identified by H. Fabre in his Souvenirs entomologiques long before the therapeutic use of maggots in osteomyelitis. He avers that the maggot has no mandible. Its mouth is not articulated. It has no lower jaw to permit it of biting or mastication. It feeds by suction. It has to liquefy its food to be able to ingest it. This it accomplishes by secreting an enzyme which converts the decayed proteinic matter into a broth. Under the circumstances, perhaps pepsin U. S. P. or 1 : 10,000 may be equally effective.

S. ELIA, Abbott Laboratories, Chicago.

[The letter was referred to Dr. S. K. Livingston, who replies:]

To the Editor:—Our studies have revealed the mouth armature of the maggot to be as follows:

(*a*) The head. The only portions of the head which can be recognized externally are the maxillae, separated on their ventral surface by the mouth and the prestomal and discal sclerites, and on their dorsal aspect by the epicranium.

(*b*) The maxillae. These organs form the largest portion of the head, and each consists of two parts separated by a slight circular sulcus, a proximal and a distal portion. The distal portion is hemispherical and has two short conical sensory papillae at its extremity. The proximal portion is cylindric and on its ventral and outer surface presents the stomal disk in front of which is a sac in which the great hooks lie when retracted.

(*c*) The mouth. This presents a triangular orifice between the proximal portions of the maxillae; the apex of the triangle is in front, and its base is formed by the labium.

(*d*) The stomal disk. This exhibits nearly a semicircular surface, grooved by a number of radiating channels. The channels on its surface open into a cup-shaped cavity on the oral edge of the disk, at the external angle of the mouth. These channels apparently serve to distribute the salivary secretion over the food, and also to conduct the food into the mouth.

(*e*) The great hooks. These are uncinate processes of the cuticular layer of the integument, and when at rest they are retracted within the special cavities of the maxillae. Brauer speaks of these hooks as mandibles. These organs are used for locomotion and to assist in the disintergration of the flesh in which the larva grows.

(*f*) The median tooth. A strong median tooth is seen deeply embedded between the maxillae. This tooth is described by Wiseman as the most important part of the mouth armature. In front of and above this median tooth there is an invagination of the hypoderm, which extends over the pharynx. This is probably the forehead, which is invaginated between the maxillae (*vorderkopf*). Below the median tooth is the true mouth. The tooth itself is clearly the upper lip, or labium, and it is probable that the mandibles are fused with this structure.

(*g*) The salivary duct. Below and behind the labium is the orifice of the salivary duct in the rudimentary ligula.

It will be seen from this description that the larva does not feed entirely by suction but is assisted in the disintegration of the flesh on which it feeds by the great hooks. It is evident on examination of the crop of the larva that solid particles of food are masticated and swallowed by the larva, and that it does not feed entirely by suction. It is also probable that the liquefaction of solid food by maggot action of which Fabre speaks in his Souvenirs entomologiques was partly at least due to Bacillus proteus contamination.

Our studies of maggot active principle do reveal the fact that the principle contains enzymes; but these are not proteolytic. The active principle has been found to be largely a solution of protein in which glucosamine, tyrosine and tryptophan predominate. The active principle agglutinates bacteria and inhibits their growth, while pepsin solutions in variable concentrations, free from acidity, do not inhibit bacterial growth. The active principle is alkaline, which precludes pepsin activity and invalidates the statement that pepsin might be elaborated by the maggot. Incidentally, the use of enzymes, pepsin particularly, has been tested and discarded in the treatment of scar tissue.

S. K. LIVINGSTON, M.D., Hines, Ill.

"TREATMENT OF OSTEOMYELITIS WITH MAGGOT ACTIVE PRINCIPLE"

To the Editor:—In order that a statement made by the authors of a paper on the treatment of chronic osteomyelitis with the use of the maggot active principle in THE JOURNAL, April 2, may not go unchallenged and thereby influence its readers to believe that the optimism therein expressed is true and adopt it, and thus reflect incalculable harm on future patients coming for treatment of compound fractures, I wish to express my absolute disagreement with the treatment for compound fractures as hinted at on page 1147: "The presence of infection in compound wounds is not an indication for delayed surgery or for the introduction of a Lane plate when such procedures are accompanied by live maggots or the maggot active principle treatment or the combination of these."

The general surgical problem of the treatment of compound fractures is already too confused. We have been advised to do everything operatively from radical débridement and Dakin's tubes down to bipp; and now, maggots.

It has always been my contention, which I have expressed in THE JOURNAL on every possible occasion, that the treatment of compound fractures differs from the treatment of simple fractures in no way except for the ever present danger of infection and chronic osteomyelitis; and, certainly, needless operations on infected or nearly infected tissues are not a prevention nor a prophylactic treatment for infection. Whether maggots cure chronic osteomyelitis as the authors claim, only time and experience will tell; but, certainly, the claim that introduction of maggots into a fresh, operative bone wound will prevent infection is rather far fetched.

My experience at the Mount Sinai Hospital, Cleveland, with the strictly nonoperative treatment of compound fractures with delayed reduction, still bears out my contention, as expressed in previous papers in THE JOURNAL, that it will produce far fewer chronic bone infections and nonunions and far better functional results than any system of immediate operations ever advised.

WALTER G. STERN, M.D., Cleveland.

RECOVERY OF GOLD FROM THE TEETH

To the Editor:—Apropos of your editorial "A Suggested Treatment for the Depression," in which you speak of recovering the gold from teeth, several years ago I called attention to a type of gold digger: the sifter of human ashes.

It was a true story, too; the manager of a crematory sifted the ashes of the dead and took the metal to a refiner, who recovered the gold. Who cared if the manager could have a new model Ford each year? It required intelligence to think of this plan and any man is entitled to recompense when his brain clicks!

MALFORD W. THEWLIS, M.D., Wakefield, R. I.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ALLERGIC RHINITIS

To the Editor:—My nose stops up easily. When I lie down at night the dependent or side next to the pillow closes. This side opens up and the other side closes if I turn over. Overheated rooms aggravate the condition, as well as damp weather. It is better in summer and worse in winter. I have frequent colds in the head which, of course, always make the condition worse. All relief measures are but temporary. I have had the best nose and throat men in Chicago examine me and no cause can be detected. My sinuses are clear. My septum was deviated a little, but this has been resected with no relief. They say that it is the inferior turbinates that swell up and close the passages. Ephedrine or cocaine solutions will immediately shrink the mucous membrane and open up the passages temporarily. I was never troubled with this before coming here three years ago. The condition is always better in the upright position and outdoors. Chilling of the arms and legs aggravates the condition. Will you kindly write what you can about this nerve-racking affliction or refer me to any literature regarding the subject? There have been many mistaken diagnoses made of this condition and many useless and even harmful operations done on the nose. Please omit name.

M.D., Illinois.

ANSWER.—The symptoms described are typical of a condition to which various names have been given, such as vasomotor rhinitis, hypersensitive rhinitis, hyperesthetic rhinitis, perennial hay fever, and allergic rhinitis. Blocking of the nostrils with or without profuse watery nasal discharge is the chief symptom. The eyes may be involved but not so commonly as in true pollen hay fever. Nasal smears will usually show eosinophils.

The causes are probably similar to those which cause true bronchial asthma: an hereditary basis with hypersensitiveness to some one or more substances which can be inhaled or eaten, as feathers, eggs or celery. Pollens may be a factor but cannot be the whole cause, as symptoms occur at times when no pollen is in the air.

The tests and treatment are similar to those for bronchial asthma: A careful history should be taken and thorough skin testing done, with removal of all possible offending factors. Desensitization is advised for those factors which cannot be completely avoided, such as dust, feathers, pollen and orris root. As asthma may follow this nasal condition, the skin testing should be complete and include epidermals, pollens, foods of all descriptions, and miscellaneous substances such as orris root contained in talcum and face powders, insect powders, cotton and house dust. The tests are usually helpful in from 50 to 75 per cent of cases of allergic rhinitis.

OCCUPATIONAL HAZARDS AMONG POSTOFFICE WORKERS

To the Editor:—I have a patient, a postmaster, who has been suffering for the past five years with recurring eczema of the nose and upper lip. Is there any known etiologic relationship between the occupation and the disease? Any suggestions, with a view to preventing recurrences, would be appreciated. X-ray exposures have not helped. Please omit name.

M.D., California.

ANSWER.—It is improbable that the condition described may be proved to be a direct result of work as a postmaster. However, skin diseases prevail among postal clerks in general. In an examination of 691 workers in post offices and telegraph offices, 326 were found to present some skin condition, including eczema (Jordan, A.: *Dermat. Ztschr.*, November, 1927, p. 193).

Postal work has in recent decades developed a lot of specialization, notably in cities. Letter sorters may suffer from entirely different occupational disorders than afflict operators of cancelation machines, and in turn their diseases may be unlike those of the postal employee who empties the dust laden mail bags after long railway hauls.

Further information on the precise work of the postal employee mentioned in the query might lead to a definite connection between his work and his disease state.

It is still a common practice in post office work to moisten the finger with the lips to facilitate sorting. This practice is of greater significance in the smaller post offices, where one or two persons perform all the required duties. This practice carries to the lips whatever inks and other substances, including bacteria and fungi, may reach the hands during mail manipulation. Cornification of the lips, with subsequent dermatitis, may readily arise from persistent finger moistening. Fungi, leading to epidermophytoses, may be implanted in the lip region in the process described.

During some active period, scrapings from the lesion should be examined for fungi, which, if found, will largely determine treatment.

PERSISTENT MASTURBATION

To the Editor:—An unmarried man, aged 29, has been masturbating since childhood (at least once daily). About six years ago he became partially impotent but since then has had intercourse twice successfully. He has not had nocturnal emissions. In spite of successful intercouse, he fears to try because of "partial or incomplete" erections, and is even afraid to go out with women because "he does not consider himself a man." After masturbation he is severely exhausted. Within the last year he has had two courses of treatment: regular prostatic massage, deep instillation of a weak solution of silver nitrate, and bromides. The silver nitrate was gradually made stronger (maximum strength, 1: 500) and the instillation was made with a Bang syringe (gradually increasing the size). Under these treatments he has improved so that now he masturbates approximately ten times a month (before it was at least thirty times). The patient is well developed but weak and has had a more or less continual pain in the lower part of the back, which is now much better. He is about 15 pounds (7 Kg.) overweight, but the excess poundage is concentrated in his breasts, pubes and hips. The distribution of hair is masculine. Grossly, his genital organs are normal. The use of the endoscope revealed a markedly congested colliculus and posterior urethra. The man is well educated and extremely anxious to be cured. However, he has lots of time on his hands and cannot help but think about his condition. Can you suggest anything that may possibly permanently cure him? The instillations were sufficiently spaced so that he could not have possibly been irritated by them. He has not had any treatment now for at least two months (according to Hühner). Please omit name and city.

M.D., New York.

ANSWER.—This case well illustrates a type of this condition which is not generally appreciated by the general practitioner. The difference between the real masturbator and (what might be called) the pseudomasturbator is that the former must masturbate, whether he wants to or not, and the act is entirely independent of any will power, while the latter as a rule does not need to masturbate but does so for pure pleasure.

This patient has "lots of time on his hands" and therefore easily falls into the temptation of masturbating. If his time were fully occupied, he would either give up the habit entirely or indulge at infrequent intervals. With each series of indulgences, the prostate again becomes congested and he gets himself pretty nearly into his previous condition.

Another series of treatments should be given and be kept up at increasing intervals to forestall a possible relapse. The treatments which he has received are perfectly proper, which is proved by the fact that the patient has definitely been improved by them. Further treatment along these lines will not only remove whatever local congestions may have recurred but will also further reduce the number of masturbations until they may cease entirely. Every case must be treated according to its own character and there is no general rule as to the number of treatments or length of time there can be applied to every case.

The patient must keep himself well occupied, and outdoor sports such as golf and baseball, in which he plays with others, are of distinct value. Certain sports, such as fishing, especially if indulged in by himself alone, wherein the patient has plenty of time to indulge in his own thoughts, are not to be advised as there is the temptation to brood over his condition and also to the development of psychic masturbation.

Another important point is to impress on the patient that masturbation does not necessarily lead to impotence. If masturbation were a cause of impotence, a vast number of people would be impotent. There is no objection to healthy association with the opposite sex, such as in dancing, but spooning must be avoided.

The patient has had normal coitus on two occasions, and he must be impressed that this illustrates that there is nothing wanting either in the sexual centers in the brain and spinal cord or in the nerves and muscles associated with the sexual act. For this type of patient, marriage may be advised as it relieves the tendency to masturbate and would remove temptation of outside coitus with all the serious related possibilities.

TREATMENT OF MUSCULAR RIGIDITY AFTER ENCEPHALITIS

To the Editor:—A white man, aged 29, had epidemic encephalitis during the 1918 epidemic, lasting six weeks, and said to be a mild case, with apparently complete recovery until 1922, when the first signs of a postencephalitic palsy made their appearance. These became progressively worse, finally incapacitating the patient. Following a consultation, scopolamine, 1/100 grain (0.6 mg.) twice a day, was started in 1926. Some improvement resulted. Next, a course of intravenous typhoid vaccine was given, each injection followed by chills and fever. Improvement was marked until 1929, scopolamine being used as before. Then regression again occurred, the patient steadily failing. Tincture of stramonium was given a fair trial, without success. The second course of typhoid was valueless. It now takes the patient almost two hours to get out of bed in the morning and to retire in the evening. An hour is required to wash his face, and about the same amount of time for each meal. Nevertheless, except for his muscular spasm, he is well. There is no difficulty in swallowing, his walk is only suggestive, there is no "pill rolling," and he still writes legibly. No lumbar puncture was ever done. The Wassermann reaction of the blood is negative. What may be done, if anything, to prevent further progress of the disease? Please omit name.

M.D., Ohio.

ANSWER.—If muscular rigidity is the main factor in this case, it may be that atropine may do better than scopolamine or stramonium. It is important to urge the patient to do all he can for himself and to assure him that such efforts do only good and no harm. If atropine in full doses fails to give relief, we would advise trying another preparation of stramonium, preferably the powdered leaves in capsules, beginning with doses of 0.13 Gm. (2 grains) and gradually increasing.

POSTOPERATIVE TREATMENT OF CANCER OF THE STOMACH

To the Editor:—Please suggest treatment of carcinoma of the stomach, recurring after a posterior Polya resection of a third of the stomach in a man, aged 52. The chief complaints are abdominal pain, worse after eating, and constant pain in back, worse after midnight. The patient is able to work but is losing weight. Please omit name.

M.D., Iowa.

ANSWER.—Nothing can be done except in a palliative way. Food should be all finely divided, and seasoning of all kinds must be avoided. It is best to take smaller meals and to take them as often as every two or three hours. All puréed vegetables and puréed fruits, milk, soft-boiled eggs, cooked cereals, custards and gelatin preparations are most beneficial.

Half an hour after eating, a powder containing calcium carbonate, 1.3 Gm. (20 grains), and 15 mg. (one-fourth grain) of codeine or 4 mg. (one-fifteenth grain) of extract of belladonna will probably control the pain.

If these measures fail, roentgen treatments over the painful areas will most likely lessen the pain, if it does not make it disappear.

TINNITUS AND VERTIGO

To the Editor:—A white woman, aged 70, is much troubled with roaring in her ears. She is otherwise in good health. Her ear trouble dates from scarlet fever as a child. Following numerous abscesses at this time she became almost totally deaf. Now she is totally deaf and her drums are shriveled and scarred beyond recognition. She has been troubled with vertigo and roaring in her head for many years. The vertigo comes and goes, but the roaring is almost constant and is described as like a locomotive letting off steam. It is naturally a great affliction, far worse than the deafness. She has been to numerous aurists without relief. Inflation of the middle ear has been tried for long periods. Can you suggest any other treatment that might help? Please omit name.

M.D., New Jersey.

ANSWER.—Both vertigo and tinnitus (noises in the head) are due to many causes. Vertigo is caused by some disturbance in the vestibular mechanism and the cerebellar and cerebral tracts. Tinnitus or noises are caused both by local conditions in the middle or inner ear or by systemic changes, such as increased blood pressure, arteriosclerosis and toxemias. In people of advanced age, vertigo is often due to changes in the blood vessels, such as arteriosclerosis, and may account for the other symptoms under consideration. The tinnitus is probably due to degenerative changes in the auditory nerve or in the inner ear, with its organ of Corti. A general examination is advisable in order to see whether one of the factors is present systemically, which may account for the symptoms of vertigo

and tinnitus. Both these conditions are sometimes relieved by the use of sedatives, such as bromides, and by attention to any systemic abnormality that may be present. In some cases either one or both symptoms are seemingly resistant to treatment at present available.

TOXICITY OF TAR REMOVERS

To the Editor:—Could you furnish me with any information regarding the toxicity, if any, of a "tar remover" manufactured by the Aixolein Company of Brooklyn? It is a preparation used to wash cloth, and workers complain of nausea, vomiting and loss of appetite when working in its fumes. Please omit name. M.D., Ohio.

ANSWER.—Owing to the fact that there are many "tar removers" used to wash cloth, and in the reclaiming of hats, this query is answered without specific reference to the manufacturer mentioned or his product.

These preparations commonly are carbon tetrachloride or carbon tetrachloride mixed with trichlorethylene, dichlorethylene, ethylene dichloride, or other chlorinated hydrocarbons. A smaller number of "tar removers" contain benzene (benzol), methyl alcohol, ethyl alcohol, and the like.

"Nausea, vomiting and loss of appetite" when working in the vapors of a "tar remover" strongly suggests carbon tetrachloride, as ordinarily these are the most frequent complaints. Severer poisoning may lead to abdominal pain, a sense of motion or masses in the abdomen, diarrhea, rarely hemorrhagic stools, headache, respiratory tract inflammation and pneumonia. The severest form of poisoning is that involving the liver, which possibly is associated with guanidine formation.

The threshold of danger for the vapors of carbon tetrachloride, trichlorethylene and ethylene dichloride is at about 200 parts of the vapors per million parts of air. At this concentration, sustained exposure may be required to elicit even minor degrees of intoxication.

ERYTHROL TETRANITRATE—PHENOBARBITAL—CINCHOPHEN

To the Editor:—A woman, aged 79, with high blood pressure, rising at times to 190, had been given erythrol tetranitrate, one or two tablets from three to four times a day. After using it for some time with what appeared to be great success, she had a sudden attack of inability to speak, and described it later as if her head were being "blown off." The systolic blood pressure went to 95 and she was in collapse. From that time, now six weeks ago, she has had a halting gait in walking and frequent lapses of mind and memory. Should not erythrol be given with great care and is it not better for younger patients with high blood pressure than it is for the aged sclerotic? A woman, aged 34, who for a nervous melancholia had been for a good many weeks on phenobarbital (luminal), had an ataxic gait and blinding spells, and at times her speech became incoherent. She took larger doses to sleep and seemed to be losing her mind. My advice was to try first taking her off phenobarbital. A recent letter, since starting West, informs me that, to the great surprise of her physician, her mental condition is perfectly normal since she quit phenobarbital. These are two drugs that, in my experience, are both capable of doing great harm. I have never seen the slightest ill effect in giving phenobarbital in epileptic patients, but I have seen collapse follow erythrol and mental symptoms follow the continued use of phenobarbital. What can you tell me about this? John Inglis of Denver is sounding a warning note on cinchophen, stating that it is injurious to the liver. Is it? Please omit name. M.D., New York.

ANSWER.—The occurrence reported after the giving of erythrol tetranitrate is probably to be ascribed to a vascular accident, such as intracranial hemorrhage, rather than to the direct effect of the drug itself. The effects noted after phenobarbital (luminal) may have been due to the agent. Many reports of injurious action on the liver from the use of cinchophen have been published.

IDIOSYNCRASY TO HOMATROPINE

To the Editor:—Is the idiosyncrasy to homatropine hydrobromide, 2 per cent solution, used at ten minute intervals for a period of an hour in refraction, of common occurrence? What are the symptoms of homatropine poisoning? Please omit name. M.D., New York.

ANSWER.—The idiosyncrasy to homatropine hydrobromide as used for refraction is not common but occurs one or more times in the experience of most ophthalmologists. The symptoms are dryness of the throat, flushing of the face, slight increase of temperature, and in some cases a feeling of faintness or even syncope. The reaction usually subsides after two or three hours, but the mental effects are unpleasant. Reactions occur more often in small children but occasionally in adults, chiefly women. The occurrence of a rise of intra-ocular tension following homatropine is of different nature but occurs in a few persons past the age of 35. It may be prevented in nearly all cases by the use of a miotic after the refraction is completed.

MEASUREMENT OF X-RAY DOSAGE

To the Editor:—In THE JOURNAL, Dec. 19, 1931, in an article entitled "The Cause and Prevention of Radiodermatitis," by H. H. Hazen, the author uses the term "a single dose of three units." Will you kindly explain the meaning. If he means three skin doses please give me an explanation of that. BUDD ROBBINS, M.D., Hanford, Calif.

ANSWER.—Dr. Hazen states, in reply to this inquiry: "By one skin unit is meant a sufficient quantity of the x-rays to depilate the human scalp, or to cause an erythema. The dosage of three units refers entirely to the amount of ray emanating from the x-ray tube. The quantity actually affecting the skin is somewhat less in the case of a small area because of the fact that not so many secondary rays are produced within the tissue."

POSSIBLE GRANULOMA OF RECTUM

To the Editor:—A woman, aged 25, syphilitic and recently treated for gonorrhea, has some form of malignant condition or granuloma of the rectum just above the anal sphincter. As antisyphilitic treatment does no good, I think this condition resembles rectal stricture discussed by Sulzberger (THE JOURNAL, February 6, p. 499) rather than a true cancer. The growth bleeds readily, but I have not taken a section. Is there a cure for this condition? Kindly outline what you think best. There is no stricture at present. The growth is painful, there is discharge and bleeding, and the growth seems to involve the vagina. It has a hard, malignant feel. M.D., New Mexico.

ANSWER.—It is impossible to hazard an accurate diagnosis of the lesion described, but the pain, discharge, bleeding, and lack of stricture are against a rectal lesion due to lymphogranulomatosis inguinalis. The position of the lesion is also more distal than that of the strictures caused by Nicolas-Favre's disease. The first and most important procedure is that a biopsy be taken, not from the inflammatory or ulcerating area but rather from the infiltration. A malignant condition must be ruled out as the most important consideration. After this has been done, various types of granulomas must be considered, including tuberculosis and granuloma venerei, as well as even rarer forms of ulcerative processes, such as gonorrheal ulcers and Lipschütz's disease. The treatment in this case must depend on the results of histologic and bacteriologic examination. In all events the necessary steps must be biopsy and smear as well as animal inoculations and other bacteriologic investigations.

TYPHOID AMONG TROOPS IN SPANISH-AMERICAN WAR

To the Editor:—In THE JOURNAL, Oct. 17, 1925, page 1243, there is a query which gave the relative rates for typhoid in the Civil War and in the World War. Probably the Spanish-American War was left out because of its short duration. Will you please give me the number of soldiers under arms in the Spanish-American War, the number of cases of typhoid, and the number of deaths? G. P. LAWRENCE, M.D., Westerville, Ohio.

ANSWER.—The total number of individuals who were in the army during the Spanish-American War was 280,564. The average annual number for the period of the war was 138,396. There were 20,904 cases of typhoid, with 2,189 deaths. The annual case rate per thousand men was 151.05, and the annual death rate 15.82.

POSSIBLE INCOMPATIBILITIES IN SOLUTIONS USED IN NOSE

To the Editor:—I have been using the following prescription taken from page 47, of the Nose, Throat and Ear and Their Diseases, by Jackson and Coates: adrenalin, 3.70 cc.; neosilvol, 10 per cent ad 30; use in dropper or atomizer every three or four hours. Some doctors are of the opinion that this formula is incompatible. What is your opinion as to its compatibility? Is adrenalin compatible with other silver preparations, such as argyrol or protargol? What is the best method of administering ephedrine alkaloid or sulphate with any of the silver preparations? EMANUEL CHASEN, M.D., Brooklyn.

ANSWER.—By adrenalin it is presumed that our correspondent refers to adrenalin chloride solution, which is a brand of "solution of epinephrine hydrochloride U. S. P." This solution made up with physiologic solution of sodium chloride is compatible with neosilvol or other organic silver preparations, such as mild silver protein or strong silver protein. Such solutions should not be kept long. With a silver salt the sodium chloride solution would be incompatible because the insoluble silver chloride would be formed. Neosilvol solutions kept in a sterile container and air tight are quite stable, but when the bottle is open, after ten days or so, there is a fungous growth with deposition of silver. Ephedrine salts are compatible with the silver protein preparations.

Council on Medical Education and Hospitals

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: New Orleans, May 9. Montreal, Sept. 19. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *General Examination.* New Orleans, May 10. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: New Orleans, May 9. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: *Regular.* Little Rock, May 10-11. Sec., Dr. Sam J. Allbright, Searcy. *Eclectic.* Little Rock, May 10. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic.* Little Rock, May 10. Sec., Dr. Allison A. Pringle, Eureka Springs.

CALIFORNIA: *Reciprocity.* Los Angeles and San Francisco, June 15. Sec., Dr. Charles B. Pinkham, 420 State Office Bldg., Sacramento.

CONNECTICUT: *Basic Science.* New Haven, June 11. Prerequisite to license examination. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

DELAWARE: Wilmington, June 14-16. Sec., Dr. Harold L. Springer, 1013 Washington St., Wilmington.

FLORIDA: Tampa, June 13-14. Sec., Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

IOWA: Iowa City, June 7-9. Dir., Mr. H. W. Grefe, Capitol Building, Des Moines.

KENTUCKY: Louisville, June 8-10. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MARYLAND: *Homeopathic.* Baltimore, June 14-15. Sec., Dr. John A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN: Ann Arbor and Detroit, June 7-9. Sec., Dr. Nelson McLaughlin, 1010 Maccabee Bldg., Detroit.

MISSOURI: St. Louis, June 14-16. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NEBRASKA: *Regular.* Omaha, June 9-11. Dir., Mrs. Clark Perkins, Lincoln.

OHIO: Columbus, June 7-10. Sec., Dr. H. M. Platter, 85 E. Gay St., Columbus.

VIRGINIA: Richmond, June 15-18. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WYOMING: Cheyenne, June 6. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

Arizona January Report

Dr. B. M. Berger, secretary, Arizona Board of Medical Examiners, reports the written examination held at Phoenix, Jan. 5-6, 1932. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Three candidates were examined, two of whom passed and one failed. Three physicians were licensed by reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
State University of Iowa College of Medicine		(1929)	83.9
St. Louis University School of Medicine		(1930)	85.7

	FAILED	Per Cent
Osteopath		72.9

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School		(1924)	Mississippi
Vanderbilt University School of Medicine		(1892)	Oklahoma
McGill University Faculty of Medicine		(1922)	Michigan

Oregon January Report

Dr. C. J. McCusker, secretary, Oregon Board of Medical Examiners, reports the written examination held at Portland, Jan. 5-7, 1932. The examination covered 11 subjects. A grade of 75 per cent was required in each subject to pass. Four candidates were examined, three of whom passed and one failed. Four candidates were licensed by reciprocity with other states from Jan. 6 to Feb. 2, 1932. The following colleges were represented:

College	PASSED	Year Grad.	Number Passed
University of Oregon Medical School		(1930), (1931, 2)	3

College	FAILED	Year Grad.	Number Failed
University of Oregon Medical School		(1931)	1

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
College of Medical Evangelists		(1929)	California
Rush Medical College		(1914)	Illinois
Jefferson Medical College of Philadelphia		(1897)	Utah
Osteopath			Iowa

Book Notices

Intelligence and Disease. By Shepherd Dawson. Assisted by J. C. M. Conn. Medical Research Council Special Report Series, No. 162. Paper. Price, 1s. Pp. 53, with 7 illustrations. London: His Majesty's Stationery Office, 1931.

In this pamphlet the authors give the results of Binet intelligence tests applied to 1,077 children in the Royal Hospital for Sick Children, Glasgow, and of similar tests applied to their brothers and sisters as controls. The report presents the following conclusions:

1. The children who were suffering from rheumatism, pneumonia, nephritis and other ailments described as non-brain did not differ in intelligence from the healthy members of the population to which they belonged: hence, disease on the whole does not appear to have any appreciable effect on the intelligence.

2. Those who were suffering from disease of the spinal cord did not differ appreciably in intelligence from their healthy brothers and sisters.

3. On the whole, it was only in cases in which there was disease of the ductless glands and of the brain that there was appreciable departure from the normal in intelligence.

4. Localized cerebral disease, e. g., cerebral tumor, was sometimes unattended by any intellectual deterioration.

5. Although spastic diplegia is usually accompanied by extreme dulness, there were some cases in which there had apparently been no deterioration of intelligence.

6. The chorea patients were neither more nor less intelligent than the rest of the patients.

7. There was clear evidence of intellectual deterioration in most, but not all, of the cases of postepidemic encephalitis. There was no statistically significant difference between those patients with the parkinsonian syndrome and those without it, or between those with behavior disturbance and those whose behavior was normal: the number of cases, however, was small, and caution must be exercised in generalizing from these observations.

8. The epileptic patients were on the whole of lower intelligence than their own brothers and sisters, and, when they were retested, they showed signs of deterioration. There was a significant correlation between general improvement in the condition of these patients and their mental progress: but the observations suggested that from the severity and frequency of the fits no reliable inference could be made regarding the subsequent progress of the patient and that severity was the less reliable guide of the two: here, again, more observations are necessary.

9. In the acute stage of illness there was on the whole a slight improvement in mental efficiency.

10. Chronic illness did not appear to retard seriously the development of intelligence.

11. There was a significant correlation between the height and the intelligence ratio of the patients: those of higher intelligence tended to be slightly taller than the rest.

12. The children of higher intelligence had on the whole begun to walk and talk at an earlier age than the others.

Clinical Roentgen Pathology of Thoracic Lesions. By William H. Meyer, M.D., Professor of Roentgenology in the New York Post-Graduate Medical School of Columbia University. Cloth. Price, $6. Pp. 272, with 183 illustrations. Philadelphia: Lea & Febiger, 1932.

This is a concise but comprehensive, lucid and conservative presentation of the essentials of roentgenologic diagnosis of the deformities and diseases of the thorax. In an introductory note the author states that the technical aspects of roentgenography represent an exact science but that the translation of the properly secured shadow values is an art in which well rounded knowledge of general medicine, as applied to the clinical aspects of the case, is an important factor. There are six sections. The first outlines the technical status of a schematic method of roentgenologic and fluoroscopic examination. The second continues with roentgenographic variations produced by types of pathologic lesions. The remaining four sections deal specifically with the roentgenologic appearances in the various abnormalities and diseases of the thoracic cage, lungs and pleura, heart and pericardium, esophagus and subphrenic space, each section ending with a concise summary. There are drawings and instructive roentgenograms of "proved cases" and a complete alphabetical cross index. While the author states that an exhaustive treatise was not contemplated, some of the conditions,

notably pulmonary abscess and bronchiectasis, would seem to merit a more detailed discussion. Bronchography with contrast mediums in bronchiectasis is not given the attention it would seem to deserve. Generally speaking, however, this attractive volume may be unreservedly recommended to any one interested in the diagnosis of abnormalities and diseases of the thorax.

Les débuts et les arrêts de la tuberculose pulmonaire. Par Léon Bernard. Bibliothèque de phtisiologie sous la direction de Léon Bernard. Paper. Price, 40 francs. Pp. 266, with 71 illustrations. Paris: Masson & Cie, 1931.

This monograph is the first of a series on tuberculosis consisting, according to announcement, of seven others under Bernard's direction, but written jointly with him or independently by other representative French authorities. At the outset, therefore, the inherent faults and virtues of a monographic series may be expected. The faults are usually a lack of balance; they are overemphasized in some respects and understressed in others. They have the advantage of imparting only the latest information and concepts of the subject.

In this first volume, Bernard has brought into a small paper-bound book form the essence of his rich and varied clinical experiences in tuberculosis, and, to the author's credit, he makes little further claim. It is a work of the first magnitude as a strictly clinical (and x-ray) treatise. It consists of twelve chapters, each of which was no doubt prepared for a class lecture.

According to the title, the work is divided into "beginnings" and "arrests," but from the standpoint of value it could be better divided into discussions on "primary" and "secondary" tuberculosis, the first of which is of a high order. The discussions on "reinfection" are interesting and some are excellent, although there is at times a great deal of speculation. The last chapter on tuberculosis and marriage, although valuable, does not belong in this work at all.

The author pushes aside many old conceptions and clarifies the beginnings of tuberculosis in simple, modern and, in many respects, novel ways. Quite correctly he divides tuberculous infections into primary and secondary, and by the use of statistics explains how primary infections take place (mostly parental in infants but less so in childhood), and how and why they proceed to arrest or death in infants, children and, occasionally, adults. All things else being equal, he says, the prognosis depends on the age of the infant and the size and frequency of the dose, although he has made no reference or suggestion to variation of virulence, which may also be a factor. He visualizes clinically the progress of the infection during the first localizations in the lungs with the immediate generalizations, then the local alveolitis to local bronchopneumonia (primary phase) and then the lymph node involvements (secondary phase). The continuation of the process either locally or in the hilar lymph nodes may assume any proportion from quick healing by fibrosis to quick termination by cavity formation and death (latent, ephemeral, "evolutive" curable and "evolutive" fatal). He uses the apt term of "sequel" or "primary sequelae" to describe the continuous or "flowing" types of primary infections. A feature of his work is what he terms the anteallergic period of the primary infection. This is the time between the localizations of bacilli followed by a systemic bacillemia and the appearance of the cutireaction, the length of which is inversely proportional to the prognosis, varying from six days to several months.

In this respect he differs from the well known theory of Ranke in emphasizing the rapidity of bacillary generalization immediately after the primary bacillary localization rather than a later "spilling over" into the blood stream from the glandular complex, leading to Ranke's secondary or hemotogenous stage. Ranke's third stage would, perhaps, be considered only a reinfection, most reinfections, according to Bernard, being endogenous. As much of the German work is founded on pathologic studies and Bernard's is based on clinical experience, it would seem that each could profit by the other's experience. Certainly the German schools and pathologic methods of approach cannot be disregarded if the pathogenesis of secondary infection or reinfection, much of which is still speculative, is to be cleared up. In this one respect Bernard has appeared to show a lack of breadth in his views which he frankly admits by his "incomplete bibliography." Although a clinical work, there is admittedly that inescapable use of pathologic terms and explanations.

Superinfection, he says, may begin as acute "pseudogrippal," hemorrhagic or insidious, with a mere mention of bronchitis, pleurisy and others. Although he does not attempt to place them in order of frequency, it would be more emphatic to place the insidious and bronchitic types first, for these are two of the most common modes of the appearance of tuberculous reinfection, as pointed out by Williams and others in this country.

An important statement is that the origin of secondary infections is chiefly endogenous in the perihilar lymph nodes. Whether it originates from a parenchymal lesion, as proposed by Parrot, Kuss, Ghon (and Ranke, although not mentioned) or from external sources by lymphatics, according to Calmette and Jousset, he is unable to say, yet this gland complex is always a result of a latent primary infection which harbors bacilli indefinitely only to light up later as secondary infections. How this spread takes place he does not say, but he states that he has seen it take place in the contralateral lung in pneumothorax as well as in many other cases by careful roentgen study. Needless to say there are many who will not only contest this assertion but produce more pathologic proof than an "x-ray post mortem." The question of the pathogenesis of such secondary lesions is wide open and the theories are many.

The various pulmonary fields are divided into the "intercleidohilar," "parahilar" and "unusual" (basalar, "juxtaparietal" and apical) which are discussed from the clinical and roentgenologic standpoints in a thorough manner. He considers two types of involvement, the "evolutive" and the "primary-sequelar state." The former includes the "infraclavicular infiltrates" of Assmann when in the infraclavicular region, but with good reason he does not consider them as any special form. In this respect he conforms to the older opinions of Ewart, Fowler and Gekler, and those more recently of Redeker and Warnecke. A third dimension study of the lung fields would have also revealed important tendencies of his "evolutive types" to localize more posteriorly. Especially his "parahilar" localizations would be found most frequently in the apexes of the lower lobes posteriorly. The "retrograde lymph extension" theory to the apex and other regions is open to question.

Chapters VI to IX inclusive pertain almost exclusively to roentgen study. A quite acceptable terminology of shadows ("linear" and "areolar threads"; "taches" (small discrete shadows) and "plages" (soft, large, diffuse densities with "spongy," "bread-crumb" or "lacunar" rarefications). Still further subdivisions are given. Bernard must be given credit for creating the x-ray entity "lobite," which is a semi-diffuse, sharply delimited shadow confined chiefly to the whole right upper lobe, highly susceptible to contraction and healing, although it is surely not so sharply separated out from related forms nor so strictly confined to the right upper as the author indicates. It is perhaps best described pathologically in McCallum's term "indurative pneumonia." Chronic miliary tuberculosis is a well established entity uncovered by the x-rays, but the "typhobacillose" of Landouzy is subject to question as any sort of entity, especially since Landouzy's original conception is rarely ever realized. Unless it can be shown to be due to an unusual form of the parasite, it seems better to look on it as extremely active and unusual phases of the "primary," "primary-sequelar" or "evolutive types" of the disease, just as the so-called epituberculosis of Eliasberg is a special acute benign type of primary infection and should not be separated out for the same reason. Certainly the emphasis is out of all proportion to the importance. One thing that is lacking throughout is sufficient emphasis on the lack of a fixed course in any form of tuberculosis. It is not one disease but a hundred in one. In other words, there are all shades of intermediate stages.

Under "arrests" of the primary infection the author considers the "occult" or symptomless forms, demonstrable only by the cutireaction; the "ephemeral" and "curable evolutive" forms. Of these three he furnished statistics to show that of 184 definitely infected infants of the first eighteen months of life, as shown by the cutireaction, there were 75.9 per cent belonging to the first two groups, while 16 per cent had exacerbations but became arrested. In other words, three out of four infected infants never show any clinical disease. The

spontaneous cures in tuberculous infants as with children and adults are, therefore, more than might be suspected. Such facts he thinks were only inadequately realized when Grancher declared that tuberculosis is the most curable of chronic diseases.

Under the arrest of superinfections he considered natural arrests, including sanatorium care, but no other artificial means. An arrest, he says, is when the bacilli remain quiet, the symptoms disappear and the patient returns to apparent good health. By cure is meant death of bacilli and a disappearance of the lesions they cause. Observations in the dispensaries and on soldiers have revealed many arrests otherwise unnoticed.

Acute tuberculosis (galloping consumption, acute generalized-miliary and caseous pneumonia) rarely becomes arrested because there is a state of anergy completely deprived of resistance. Ephemeral episodes, such as simple hemoptysis, nearly always become arrested spontaneously. The "evolutive type" produces the great variable problems that run an up and down course. The nodular ulcerocaseous heal best, ulcerofibrous (including fibroids) not so well; chronic miliary and curable pneumonias like "lobite" have strong tendencies to heal. Anatomic healing consists in two processes: resolution of alveolitis, pneumonias, and the like; and fibrosis with caseation and calcification. Only recent lesions can resolve, showing on the roentgenogram as irregular densities, discrete densities, networks and cavities. The fibrous types are many, lobite, fibrothorax with contraction, distortion, and a resulting bronchiectasis, emphysema and a disappearance of cavities, of which he describes four types, depending on the stage of evolution. There is the "bread-crumb" and "honeycomb"; annular shadow; and two precavity stages that are indefinite and, therefore, of little practical use. Jacerod's classification into four progressive groups seems more logical, but all are more or less inaccurate and only tentative.

In spite of minor faults, this book is a welcome and useful contribution to the field of phthisiology, in which there is at present a paucity of up-to-date clinical works.

A Text-Book of Medicine for Nurses. By E. Noble Chamberlain, M.D., M.Sc., M.R.C.P., Senior Assistant Physician and Cardiologist, Royal Southern Hospital, Liverpool. With a foreword by Miss E. M. Musson, C.B.E., R.R.C., Chairman, General Nursing Council for England and Wales. Cloth. Price, $5. Pp. 439, with 46 illustrations. New York: Oxford University Press, 1931.

The author endeavors to include in one small volume a review of medicine suitable for nurses. Among the chapter headings are bacteriology, infectious diseases, nutritional and metabolic disorders, diseases of the respiratory system, diseases of the nervous system, diseases of the heart and blood vessels, the principles of dietetics, therapeutics, and poisoning. In an appendix, the author describes lumbar puncture, paracentesis, venesection, the fractional test meal, and the preparation of patients for roentgen examination. Farther on is a tabulation of the infectious diseases, with the cause, symptoms and treatment. There are brief accounts of the physiology of the various systems preceding the chapters on systemic diseases, and brief references to pathology. All this material is presented in clear and simple language. A number of infectious diseases and other pathologic conditions are illustrated with well selected pictures, some of which are in color. The book appears to be well adapted to the needs of the better educated nurse and, indeed, will be found useful to persons outside the nursing profession who desire to become acquainted with the fundamental factors in disease.

Ergebnisse der Kreislaufforschung: Monographien aus dem Gebiete beschreibender, experimenteller und klinischer Kreislaufforschung. Herausgegeben von Dr. med. Bruno Kisch, ord. Professor der Physiologie an der Universität Köln. Band II: Der Herzalternans. Von Dr. med. Bruno Kisch. Paper. Price, 20 marks. Pp. 214, with 54 illustrations. Dresden: Theodor Steinkopff, 1932.

The aim of this work is to separate more sharply than has heretofore been done the question of the nature of the alternating heart from its manifestations and its mechanism. The underlying cause, the author declares, is chemical or physico-chemical. He recognizes the difficulties of conclusively proving this theory, but he has ventured to set forth his views in the hope that by so doing the way may be pointed out for further investigations along this line. Such investigations, he believes, will throw light also on the real nature of normal functions of the heart and will help solve the problem of heart weakness. Those interested in a review of the various theories concerning the alternating pulse, with stress laid on the biochemical aspects, will wish to study this volume. With it and the monograph of Gravier (1914) and the later one of Poumailloux (1930) the reader may be sure that the subject is presented with completeness and from different points of view.

Reclaiming the Drinker. By Charles B. Towns. Cloth. Price, $1. Pp. 77. New York: Barnes & Company, 1931.

This is written as an advertisement of the Towns treatment and hospital. Mr. Towns is against alcohol in any form internally and says that "the time may come in the not-distant future when to prescribe alcohol in sickness may be considered malpractice." He further advises that while he is not a physician he has a somewhat extensive knowledge of pathology, sociology, criminology, biology and psychic reclamation based on long research and experience, and that he fully understands this subject and can be of service to the alcoholic addict or physician in charge. He quotes many medical men and professors in their arguments against alcohol, presenting nothing new or of scientific interest; but evidently Mr. Towns has not read or does not approve of Starling's work "The Action of Alcohol on Man." He says that "the sudden withdrawal of alcoholic beverages is the real reason for alcoholic insanity or development of delirium tremens." Mr. Towns evidently does not appreciate the fact that if this were so, hundreds of thousands of alcoholic addicts who had not the price to lay in a supply of liquor when prohibition went into effect would have developed delirium tremens, when as a matter of fact delirium tremens almost disappeared for a year, until the speakeasy and bootlegger got established. He believes that his treatment (which was given to the medical profession in 1909) is a specific that will eliminate any desire or craving for liquor, that it unpoisons the alcoholic addict and eliminates every trace of the toxic material stored up in the cells of his body. Also he believes that the craving for a drink never comes back of itself and that while there may have been some relapses, it was not because of the craving. He has not the slightest idea of the percentage of relapse that occurs because he tells these patients that if they do not make good he does not want to know about it. He closes by saying that "there never was or will be any good booze manufactured, and there is not a single thing to be said in favor of liquor."

Indicaciones e interpretación de los analisis clinicos. Por Sobrino Alvarez. Prologado por el Dr. Teófilo Hernando. Paper. Price, 8 pesetas. Pp. 190. Madrid: Casa Editorial Bailly-Bailliere, S. A., 1931.

Original publications in the medical sciences are important for advancement, but didactic textbooks have their place in the literature. This book is of the latter type. The author lists the methods of sending specimens to a laboratory and emphasizes the necessity of sterile containers whenever a bacteriologic examination is desired. The second chapter outlines the average normal laboratory results and some of the characteristic conditions found with definite clinical entities. Much space is consumed with tables of the usual laboratory results.

A Radiological Study of the Para-Nasal Sinuses and Mastoids. By Amédée Granger, K.C.B., K.C.I., M.D., Professor of Radiology, Louisiana State University Medical Center. Gold Medal of the Radiological Society of North America in 1926 and Gold Academic Palms of France in 1929. Cloth. Price, $5.50. Pp. 186, with 113 illustrations. Philadelphia: Lea & Febiger, 1932.

This splendid monograph discusses in its first part the paranasal sinuses and mastoids in radiologic study, with anatomic landmarks and various views of the use of iodized oils for diagnosis. Then follow fifty-two illustrations of the various positions used in radiologic examination of the paranasal sinuses. In the second part there is a discussion of the mastoids in the various positions used in their study, and then come the remaining illustrations referring to various changes in and about the mastoid process. The fine quality of paper used brings out the details of most of the illustrations. There is an occasional error in the spelling of the Latin terms, but this does not detract from the excellence of the book. The author, who is recognized as one of the greatest radiologists in the country, bases his statements on his tremendous experience, covering many years. The book contains a wealth of information, which should prove of interest to all otolaryngologists and should aid them in the interpretation of their roentgenograms.

Medicolegal

Fraudulent Concealment of Malpractice Defined

(Maloney v. Brackett (Mass.), 176 N. E. 604; Maloney v. Smith-Peterson (Mass.), 176 N. E. 604)

The plaintiff was operated on by the defendants. Under writs dated Nov. 5, 1926, she sought to recover damages from the defendants, charging that the operation was unnecessary, unwise and impractical. Her cause of action, if she had any, accrued at the time of the operation, March 23, 1921, and under ordinary conditions was barred after two years from that date. The plaintiff, however, charged that the defendants fraudulently concealed from her a knowledge of her cause of action. If that charge were true, then so long as the cause of action was fraudulently concealed, the statute of limitations would not run. At the conclusion of the plaintiff's testimony the trial court directed a verdict for the defendants. The plaintiff thereupon appealed to the Supreme Judicial Court of Massachusetts.

According to the plaintiff's testimony, the defendants, after having had her under observation for several days, advised her to be operated on and told her that if an operation was performed she would leave the hospital in six weeks and be well in two months. The operation itself, an operation for the fixation of the sacro-iliac joint, seems to have been successful so far as the fixation of the joint was concerned. The plaintiff, however, did not obtain the relief she expected. But, said the Supreme Judicial Court, the prediction by the defendants as to the patient's prospective recovery had no tendency to prove that they did not in good faith consider the operation advisable. Even if it were a fact that the piece of bone transplanted from the ilium to procure fixation was too small and that the patient, as she alleged, did not learn of that fact until July or August, 1925, it would not follow that the operation itself was unnecessary, unwise and impractical. The plaintiff knew that she had been suffering from a sacro-iliac strain for more than two years before the operation was to be performed. She knew that before the operation a cast had been made on her body to be used after the operation was completed. She herself testified in substance that at all times after the operation her condition was worse than it was before. The cause of action, said the Supreme Judicial Court, cannot be said to be concealed from one who has personal knowledge of facts creating it. The rule that fraud cannot be presumed applies when a charge is made of fraudulent concealment of a cause of action. Mere silence concerning the cause of action or failure to inform the plaintiff of the facts on which her cause of action rests is not ordinarily a fraudulent concealment within the meaning of the statute. The fraud referred to in the statute is fraud accomplished by positive acts done with intent to deceive. The failure of a physician to disclose a cause of action to a patient could not be found by a jury to be a breach of his professional duty in the absence of evidence showing that he knew or believed that a cause of action existed. In the present case, said the Supreme Judicial Court, we discover no evidence that either defendant knew or believed that he had performed or assisted in the performance of an unnecessary operation and no evidence of violation of professional duty or concealment of facts such as could within the statute establish a fraudulent concealment of the cause of action. The action of the lower court was sustained.

Physician's Automobile Exempt from Levy to Enforce Judgment.—In Louisiana, the automobile of a physician necessary to the conduct of his practice, it has been held, may not be levied on to enforce a judgment rendered against that physician. Article 644 C. P. shields from seizure the "tools and instruments" necessary for the exercise of the trade or profession by which a judgment debtor gains his living. A physician's automobile necessary to the conduct of his practice, said the court of appeal of Louisiana, first circuit, in construing the statute, is such a "tool or instrument," within the meaning of the statute, as is exempt from seizure.—*Webb v. Larcade, Sheriff, et al. (La.) 134 So. 292.*

Society Proceedings

COMING MEETINGS

American Medical Association, New Orleans, May 9-13. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Goiter, Hamilton, Ontario, June 14-16. Dr. J. R. Yung, 670 Cherry St., Terre Haute, Ind., Secretary.

American Association for the Study of the Feeble-Minded, Philadelphia, May 26-29. Dr. Groves B. Smith, Godfrey, Illinois, Secretary.

American Association of Genito-Urinary Surgeons, Niagara Falls, Ontario, Canada, May 26-28. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.

American Bronchoscopic Society, Atlantic City, May 21. Dr. Richmond McKinney, 899 Madison Avenue, Memphis, Tennessee, Secretary.

American Climatological and Clinical Association, Atlantic City, May 5-7. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American Dermatological Association, Havana, Cuba, May 3-5. Dr. William H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Gastro-Enterological Association, Atlantic City, May 2-3. Dr. Charles G. Lucas, 307 West Broadway, Louisville, Secretary.

American Gynecological Society, Quebec, May 30-June 1. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.

American Heart Association, New Orleans, May 10. Dr. Irl C. Riggin, 450 Seventh Avenue, New York, Executive Secretary.

American Laryngological Association, Atlantic City, May 19-21. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 23-25. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.

American Neurological Association, Atlantic City, June 6-8. Dr. Henry Alsop Riley, 117 East 72d Street, New York, Secretary.

American Orthopedic Association, Toronto, Canada, June 15-18. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.

American Otological Society, Atlantic City, May 17-19. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Rochester, Minnesota, May 26-28. Dr. Hugh McCulloch, 500 South Kingshighway, St. Louis, Secretary.

American Proctologic Society, Memphis, May 6-7. Dr. Curtice Rosser, 710 Medical Arts Building, Dallas, Texas, Secretary.

American Psychiatric Association, Philadelphia, May 30-June 3. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.

American Society for Clinical Investigation, Atlantic City, May 2. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Secretary.

American Society of Clinical Pathologists, New Orleans, May 6-9. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.

American Surgical Association, New Haven, Conn., May 16-18. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.

American Therapeutic Society, Baltimore, May 16-17. Dr. Grafton Tyler Brown, 1801 I Street N.W., Washington, D. C., Secretary.

American Urological Association, Toronto, May 30-June 2. Dr. Gilbert J. Thomas, 1009 Nicollet Avenue, Minneapolis, Secretary.

Association for the Study of Internal Secretions, New Orleans, May 9-10. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.

Association of American Physicians, Atlantic City, May 3-4. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Pasadena, May 2-5. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Connecticut State Medical Society, New Haven, May 25-26. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, D. C., May 4-5. Dr. C. B. Conklin, 1718 M Street, N.W., Washington, D. C., Secretary.

Florida Medical Association, Sarasota, May 3-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Savannah, May 17-20. Dr. Allen H. Bunce, 139 Forrest Avenue N.E., Atlanta, Secretary.

Illinois State Medical Society, Springfield, May 17-19. Dr. Harold M. Camp, 203 Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Sioux City, May 4-6. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 3-5. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, New Orleans, May 9-10. Dr. P. T. Talbot, 1430 Tulane Avenue, New Orleans, Secretary.

Maine Medical Association, Rangeley, June 16-18. Dr. Philip W. Davis, 22 Arsenal Street, Portland, Secretary.

Massachusetts Medical Society, Boston, June 8-10. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, San Francisco, June 20-22. Miss Marjorie J. Darrach, 645 Mullett Street, Detroit, Secretary.

Medical Women's National Association, New Orleans, May 8-9. Dr. Sylvia Allan, Winthrop College, Rock Hill, S. C., Secretary.

Minnesota State Medical Association, St. Paul, May 23-25. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Missouri State Medical Association, Jefferson City, May 23-26. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.

National Tuberculosis Association, Colorado Springs, June 6-9. Dr. Charles J. Hatfield, 7th and Lombard Streets, Philadelphia, Secretary.

Nebraska State Medical Association, Lincoln, May 24-26. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 17-18. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 15-17. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

New Mexico Medical Society, Santa Fe, May 19-21. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.

New York, Medical Society of the State of, Buffalo, May 23-25. Dr. Daniel S. Dougherty, 2 East 103d Street, New York, Secretary.

Ohio State Medical Association, Dayton, May 3-4. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Tulsa, May 24-26. Dr. Claude A. Thompson, Manhattan Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 2. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
South Dakota State Medical Association, Watertown, June 20-22. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Waco, May 5-7. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Parkersburg, June 21-23. Mr. J. W. Savage, Professional Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

49: 335-508 (Jan.) 1932

Development of Suprarenal Glands in Guinea-Pig (Cavia Cobaya). Mary T. Harman and R. C. Derbyshire, Kansas City, Kan.—p. 335.
Development of External Form of Guinea-Pig (Cavia Cobaya) Between Ages of Eleven Days and Twenty Days of Gestation. Mary T. Harman and Marjorie Prickett, Kansas City, Kan.—p. 351.
Enlargement and Hyperplasia of Thyroids in Young Duck from Injection of Anterior Pituitary. J. A. Schockaert, New York.—p. 379.
Presence and Influence of Two Spiral Streams in Heart of Chick Embryo. J. L. Bremer, Boston.—p. 409.
Observations on Living Preformed Blood Vessels as Seen in Transparent Chamber Inserted into Rabbit's Ear. E. R. Clark and Eleanor Linton Clark, Philadelphia.—p. 441.
Origin of "Parafollicular" Cell, Second Epithelial Component of Thyroid Gland of Dog. J. F. Nonidez, New York.—p. 479.

American Journal of Diseases of Children, Chicago

43: 273-532 (Feb.) 1932

*Parenteral B C G Vaccination. Camille Kereszturi, W. H. Park and Béla Schick, New York.—p. 273.
*Value of Increased Supply of Vitamin B_1 and Iron in Diet of Children. Pearl Summerfeldt, Toronto, Canada.—p. 284.
*Mechanism of Anemia Associated with Infection in Infancy and in Childhood. I. N. Kugelmass and M. Lampe, New York.—p. 291.
Phosphorus Metabolism in Infants: Comparative Study of Phosphorus Metabolism of Healthy Infants Fed Breast Milk and Cow's Milk. D. B. Witt, Chicago.—p. 306.
*Diagnosis of Congenital Syphilis in the New-Born. Ethel C. Dunham, New Haven, Conn.—p. 317.
*Excretion of Creatine and Creatinine: Hourly Excretion in Normal Children and in Children with Progressive Muscular Dystrophy. M. Catherine Magee, Ann Arbor, Mich.—p. 322.
Basal Metabolism of Normal Children: Puberty Reaction. Anne Topper and Hannah Mulier, New York.—p. 327.
*Anemia of the New-Born. A. F. Abt, Chicago.—p. 337.
Simple, Rational and Effective Treatment of Stubborn Vaginal Infections in Infants and in Little Girls. G. C. Schauffler, Portland, Ore.—p. 350.
Infection of Ear in Cases of Infection of Gastro-Intestinal Tract in Infants. J. G. Druss, New York.—p. 356.
Gaucher's Disease: Clinical Study, with Especial Reference to Roentgenography of Bones. O. Reiss, Los Angeles, and K. Kato, Chicago.—p. 365.
*Improved Protective Device in Treatment of Infantile Eczema. J. V. Greenebaum and Goldie M. Keith, Cincinnati.—p. 387.

B C G Vaccination.—Kereszturi and her associates state that the enteral or oral method of administration of B C G vaccine has been used in New York City since the beginning of 1927. The statistics concerning its value are favorable; still the authors felt the need of the parenteral method. The advantages of this procedure compared to the oral are: 1. It can be given to patients of any age, provided they are free from tuberculosis and give a negative tuberculin reaction. 2. The control of the dosage is more exact than if one depends on absorption of the bacilli from the alimentary tract, from which only a small part of the orally given vaccine is absorbed and the other part excreted. 3. Those who believe that hypersensitiveness to tuberculin parallels immunity are more satisfied with the parenteral method because in 87 per cent of the cases the Mantoux reaction becomes positive, at least temporarily. Considering the three factors mentioned and encouraged by the favorable reports from the literature, the authors started the parenteral B C G vaccination in May, 1929. Up to Jan. 15, 1931, they vaccinated seventy-eight patients parenterally. Some of them were vaccinated more than once, or were orally vaccinated the first time, so that the total number of vaccinations was ninety-one. On the basis of their observations the authors conclude that intradermal B C G vaccination is superior to the subcutaneous type, because if the technic is correct no cold abscess develops. On the other hand, hypersensitiveness to tuberculin occurs a little more frequently and lasts somewhat longer when one employs the subcutaneous method. In 87 per cent of the parenterally vaccinated patients, hypersensitiveness to tuberculin developed either temporarily or for a longer period. The use of both the subcutaneous and the intradermal methods of B C G vaccination was harmless.

Vitamin B_1 and Iron in Diet.—Summerfeldt reports that the daily administration of 4 ounces of a special cereal mixture composed of farina 53 per cent, oatmeal 18 per cent, corn meal 10 per cent, wheat germ 15 per cent, bone meal 2 per cent, dried brewers' yeast 1 per cent and alfalfa leaf meal 1 per cent, thereby supplying in liberal amounts calcium, phosphorus, iron, copper and vitamins A, B_1, B_2 and E in the diet of eleven children of approximately normal weight, over a period of ten weeks, resulted in a weight increase at 3.57 times the expected rate of gain. A control group of ten children fed 4 ounces of ordinary cereals in the daily diet gained at 1.17 times the expected rate. For a second ten week period the groups were reversed, and the control group now received the special cereal mixture. The rate of gain of these children was 4.84 times the expected rate. The new control group, formerly on the special cereal mixture and now receiving ordinary cereals, gained at just the expected rate. These results, in conjunction with those reported by Morgan and Barry, raise the question as to whether the average child today is receiving an amount of vitamin B_1 (the antineuritic vitamin) sufficient to produce the optimal rate of growth. The average hemoglobin concentration at the conclusion of the periods during which they were fed the special cereal mixture was 11.3 Gm. per hundred cubic centimeters of blood for children 1 to 11 and 11.2 Gm. for children 12 to 21. The average hemoglobin concentration at the conclusion of the periods during which they were fed ordinary cereals was 10.1 Gm. per hundred cubic centimeters of blood for children 1 to 11 and 10.5 Gm. for children 12 to 21. It would appear that the high iron content of the special cereal mixture is of value in increasing the hemoglobin content of children.

Anemia with Infection.—According to Kugelmass and Lampe, anemia associated with infection results from either diminished production of erythrocytes or increased destruction of circulating erythrocytes. The younger the infant the more widespread the erythrogenic islets, and, therefore, the more susceptible the labile hemogenic-hemolytic equilibrium. The normal reticulocyte content is higher in infants than in adults because of relatively greater blood demand, and the normal icteric index is correspondingly elevated because of the relatively greater physiologic red cell destruction. Infection depresses the rate of regeneration of hemoglobin and red cells, rapid in acute streptococcal invasions and slow but cumulative in chronic infections. The hypochromia is due to the excessive blood demand, which makes the last stage, hemoglobin saturation, incomplete. Marked diminution in red cells is due to associated liver damage, thereby interfering with erythrocyte synthesis from the store of available amino-acids. Sepsis increases the rate of blood destruction and produces liver damage by focal lesions.

Congenital Syphilis in the New-Born.—Dunham concludes that in suitable cases in which the Wassermann reaction of the mother's blood is positive, repetition of the Wassermann test on the new-born infant at frequent intervals will aid in differentiating between reactions that indicate a true syphilitic infection and those that are positive because of the passage of antibodies from the mother to the infant. Correct evaluation of the results of repeated tests will prevent the unnecessary treatment of nonsyphilitic infants.

Excretion of Creatine and Creatinine.—The hourly excretion of creatine and creatinine in five cases studied by Magee showed a marked fluctuation of both substances. In some instances the fluctuations were related to variations in

urine volume. This was more marked in case 1, which showed an abnormal creatine and creatinine metabolism. The creatinine coefficient, 2, was very low and the total creatinine coefficient, 6, was below normal. This is characteristic of muscular dystrophy. There was no correlation in urine volume and creatine and creatinine excretion in case 2, a mild dystrophic condition in which there was a low normal creatinine and total creatinine coefficient (5.9 and 7.1). There was little correlation of urine volume and creatine and creatinine excretion in a case of chronic anterior poliomyelitis and in two normal subjects. Although individual cases show a maximum excretion of creatine and creatinine at definite hours of the day, variation from case to case is too marked to conclude that the fluctuations occur at definite intervals. There is no definite correlation in simultaneous maximum excretion of creatine and creatinine, although in some cases it was noted. In every case there was a greater excretion of creatine and creatinine during the day than during the night. The higher percentage of creatine eliminated during the day may indicate a correlation between this substance and changes in metabolic activity.

Anemia of the New-Born.—Abt chooses anemia of the new-born of unknown cause as the most appropriate terminology for the condition in a group of reported cases in which new-born infants of healthy parents, born in normal labor and from whose history hemorrhage or loss of blood has been carefully excluded, suddenly become profoundly anemic within the first fourteen days of life. These babies, except for the suddenly developing anemia, have shown no other abnormalities, behaving in every other way as normal new-born infants. They have gradually recovered without demonstrable residual effect, both without and with medication and the transfusion of blood. The reported cases found in the literature are analyzed in detail. The author reports an additional case, the blood changes of which differed from those previously reported, in that a rare hematologic condition, mononuclear erythrophagocytosis, was present in the circulating blood. This condition probably has no bearing on the etiology of anemia of the new-born. The various possible etiologic factors that might produce this anemia are discussed, but until the exact mechanism of the normal adaption of the blood-forming and blood-destroying processes during the new-born period are more clearly understood, the exact etiologic factor cannot be determined.

Protective Device in Treatment of Infantile Eczema.—The device described by Greenebaum and Keith consists of two pieces of cellophane, one piece 16 by 20 inches (40 by 50 cm.) which is fastened on the bed by adhesive strips, the other piece 14 (35 cm.) by 16 inches (the size varies according to the size of the patient), with an area 3½ inches (9 cm.) in diameter cut from the center, with an opening extending from this circle to the edge of the cellophane. All of the edges are bound with adhesive plaster, one-half inch (1.3 cm.) wide, and the circle in the center is covered by overlapping pieces of adhesive plaster from one-half to 1 inch (2.5 cm.). When completed, the jacket is placed on the child, and the edges are brought together in the back and fastened with adhesive plaster. The lower edges are brought together under the arms and fastened together with safety pins, pinned into the binding. The child is then laid on the bed, so that the head rests on the cellophane, which is fastened to the sheets. The arms and legs are restrained, and in this position the baby may strain and rub its face without injuring the eczematous areas, because the smooth cellophane covering offers no resistance. This device is simple and inexpensive, and lasts for twenty-four hours.

American J. Obstetrics and Gynecology, St. Louis

23: 155-308 (Feb.) 1932

Newer Obstetrics: Presidential Address. A. H. Bill, Cleveland.—p. 155.
*Study of Thyroid Activity in Normal Pregnancy. S. D. Soule, St. Louis.—p. 165.
*Consideration of Cesarean Section, with Survey of One Thousand and Forty-Seven Cases in Cleveland Registration Area in Five Years. A. J. Skeel and F. F. Jordan, Cleveland.—p. 172.
What is Conservatism in Treatment of Neisserian Infection? D. R. Huggins, Pittsburgh.—p. 187.
*Abdominal Total Hysterectomy. E. von Graff, Iowa City.—p. 195.
Rôle of Focal Infections in Etiology of Toxemia of Pregnancy. P. W. Toombs, Memphis, Tenn.—p. 199.
Treatment of Pus Tubes. J. F. Baldwin, Columbus, Ohio.—p. 207.
*Late Sequelae of Eclampsia. M. P. Rucker, Richmond, Va.—p. 211.
*An Eight Months' Extra-Uterine Pregnancy Calcified and Retained for Forty Years. P. Titus and J. R. Eisaman, Pittsburgh.—p. 217.
Carcinoma of Uterus Complicated by Tubal Gestation. S. E. Tracy, Philadelphia.—p. 223.
Abdominal Incisions. E. P. Sloan, Bloomington, Ill.—p. 226.
*Mural Sarcoma of Uterus, with Report of Thirteen Cases. S. A. Wolfe, Brooklyn.—p. 232.
Elective Cesarean Section as Prophylactic Measure Against Obstetric Mortality and Morbidity. E. A. Schumann, Philadelphia.—p. 248.
Additional Reports on Satchel Handle Operation for Artificial Vagina ("Formation of Artificial Vagina by New Plastic Technic"). R. T. Frank and S. H. Geist, New York.—p. 256.
*Referred Pain of Ureteral Origin. Faith S. Fetterman, Philadelphia.—p. 259.
Ovarian Pregnancy with Comments on Its Etiology: Report of Case. A. Wollner, New York.—p. 262.
Carcinoma of Bartholin Gland. J. Rabinovitch, St. Louis.—p. 268.
Ruptured Corpus Luteum Cyst, with Marked Intraperitoneal Hemorrhage. L. Rudolph, Chicago.—p. 275.

Thyroid Activity in Normal Pregnancy.—Soule describes experiments in which he demonstrated conclusively that a substance which lowers the level of mouse liver glycogen, is present in the blood serum of pregnant women. This glycogen reduction indicates an increased level of thyroid hormone in the test material (pregnancy serum) injected. The evidence seems to indicate that this increase in thyroid hormone is due to an actual physiologic hyperfunction of the thyroid of the mother during pregnancy.

Consideration of Cesarean Section.—Skeel and Jordan call attention to the fact that the primary or basic operative risk of the cesarean operation is high (1 to 2 per cent). There is also a definite late or delayed mortality present with every pregnancy and labor occurring after one cesarean section. These considerations make the decision to perform the operation a grave one. The risk is real even under favorable circumstances. However, statistics such as are being published from time to time showing the rapidly mounting number of deaths following cesarean section should not be used as evidence that the operation is being abused. Such statistics merely show the more general use of this procedure in the treatment of grave pathologic conditions complicating pregnancy and labor. Reasoning of this type would prove diphtheria antitoxin a dangerous remedy. The advisability of cesarean section for placenta previa, ablatio placentae, preconvulsive toxemia, and so on, can be determined only by comparison of the results, with those obtained by other methods of handling the same conditions. The mature trained judgment of an expert obstetrician is necessary for such a decision. In the authors' series the low or cervical operation gave a definitely lower mortality rate than did the classic. They advise its use in all potentially infected cases. In those with definite sepsis the Porro should be considered. Their series shows as do preceding ones, that the mortality following cesarean section for eclampsia is unjustifiably high. It is not good treatment for this condition.

Abdominal Total Hysterectomy.—Von Graff states that the difference in mortality in operated cases, between subtotal and total hysterectomy, is not noteworthy and is due merely to the selection of more grave conditions for the latter operation. Every patient with an amputated uterus is threatened during her lifetime by cancer of the cervix. If one believes in the value of active prophylaxis in the struggle against cancer and in one's duty to do the best for his patients, one should perform total hysterectomy as a routine, reserving the subtotal operation for a few selected cases.

Late Sequelae of Eclampsia.—In forty-nine clinic cases and thirty-seven private cases followed by Rucker for at least three years and twenty-seven private cases in which there was a definite history of eclampsia, recurring eclampsia was found in 7.5 per cent. From 16 per cent to 27 per cent of posteclamptic pregnancies were toxic. The yield of live births per pregnancy is somewhat less after eclampsia than normal, but this can be satisfactorily accounted for by the number of toxic pregnancies that one finds at this time. Upward of 13 per cent of the private patients were found to have hypertension. There were four deaths from toxemia in posteclamptic pregnancies and three deaths from cardiorenal disease in the eighty-six cases that were followed for three years or more. The "expectancy" for the whole group is 0.8 per cent. More tuberculosis occurred in this group than one would naturally expect.

Extra-Uterine Pregnancy Calcified and Retained.—The chief points of the case reported by Titus and Eisaman briefly summarized are (1) that an abdominal pregnancy of approxi-

mately eight months' development became calcified and was carried as a tumor for forty years, (2) that an accurate diagnosis of the condition itself was made in advance of operation by roentgen examination which showed fetal bones within a calcified shell, (3) that by injection of the uterine cavity and the fallopian tubes with iodized oil the location of the fetal mass was determined by roentgen examination as being outside the uterus and tubes, a diagnosis of extra-uterine pregnancy thus being established in advance. Roentgen visualization of uterus and tubes after injection is a relatively new procedure supplementing Rubin's tubal insufflation test, and the authors believe from a brief search of the literature that this may be the first occasion in which an opportunity has been presented for the employment of the same procedure for the diagnosis of abdominal pregnancy.

Mural Sarcoma of Uterus.—Wolfe reports that the Gynecological Laboratory of the Long Island College Hospital received 510 specimens removed for supposed fibromyoma of the uterus from Sept. 1, 1923, to Dec. 1, 1929. Thirteen sarcomas were encountered, an incidence of 2.54 per cent. Of these, eight were primary tumors including two mixed sarcomas of the body; and five originated in preexisting fibroids. Mural sarcoma of the uterus comprises a primary of de-novo group and a secondary form occurring in preexisting fibromyomas. Both are of myogenic origin and arise from orthotopic embryonal rests in the uterine wall or within the confines of a preceding fibromyoma. The mixed sarcoma of the uterus is a primary sarcoma of the teratoid type. The degree of maturation of the component cell determines gross appearance, rate of growth and clinical malignancy of these tumors. (1) Tumors comprised of differentiated muscle cells (myoma malignum) clinically and grossly simulate fibromyomas. They are slow growing, rarely recur or metastasize. (2) More actively growing forms appear as spindle, fusiform and round and giant cell sarcomas. Grossly they are homogeneous and opaque; infiltrate relatively early and metastasize by the blood stream. (3) Mixed sarcomas comprised of embryonal elements grow rapidly and recur promptly. Cell differentiation produces mucoid, smooth and striated muscle, osteoid tissue and cartilage; glands are of local stamp. The site of the tumor determines the clinical mode of onset. Primary sarcomas more frequently submucous produce bleeding relatively earlier and more constantly than in the secondary group arising in interstitially placed myomas. Both types are most prevalent after the menopause, when fibroids as a rule are inactive. Diagnostic curettage will yield material for pathologic diagnosis in 50 per cent of primary and secondary sarcomas. Uteri removed for supposed fibroids after the menopause require immediate gross pathologic examination to exclude sarcoma. Radical extirpation followed by postoperative radiation is indicated in growths still confined to the uterus. Palliation by radiotherapy should be the rule for advanced cases. Prognosis though generally grave is surprisingly good in myoma malignum. Sarcomas arising in fibroids offer fair prognosis, if of small size and confined within the capsular limits of the original growth.

Referred Pain of Ureteral Origin.—According to Fetterman, study of the nerve supply of the ureter shows theoretically that a pathologic change in the upper ureter may manifest itself by gastro-intestinal disturbances, and also by pain felt in the surfaces supplied by the intercostal and lateral cutaneous nerves; that the middle ureter may cause pain in the distribution of the lumbar nerves over the vulva and the front of the thigh; and that the pelvic ureter may produce sciatic pain. The proof that these pains are of ureteral origin has been obtained by reproducing them with the manipulation of the ureter, and by relieving them when it was possible to cure the suspected pathologic condition. The incidence of this referred pain of ureteral origin is 40 per cent of all the author's recent urologic cases. She emphasizes the fact that comparatively so few of these patients presented obvious urinary symptoms as their chief complaint; that so few of them, even with vesical irritability, showed either pyuria or fresh inflammation of the bladder or urethra. The key to their causative lesions was the interpretation of their pain. Hence she believes that awareness of the repercussions of ureteral pathology as manifested by referred pain will elucidate many a cloudy diagnosis and obviate much medical and surgical therapy which has proved, for the patient, at least, beside the point.

American Journal of Syphilis, St. Louis

16: 1-144 (Jan.) 1932

Dispensary Treatment of Syphilis. H. H. Hazen, Washington, D. C.—p. 1.
Some Observations on Treatment of Syphilis. H. N. Cole, Cleveland.—p. 9.
*Reactions Following Administration of Arsphenamines and Methods of Prevention. F. A. Ireland, Toronto, Canada.—p. 22.
*Urinary Excretion of Phenolsulphonphthalein After Arsphenamine. G. B. Roth, Washington, D. C.—p. 39.
*Stovarsol in Prophylaxis and Treatment of Trypanosomiasis and Syphilis. J. A. Kolmer, assisted by Anna M. Rule, Philadelphia.—p. 53.
Trypanocidal and Spirocheticidal Properties of Treparsol. J. A. Kolmer, assisted by Anna M. Rule, Philadelphia.—p. 68.
Note on Trypanocidal and Spirocheticidal Properties of Acetylarsan. J. A. Kolmer, assisted by Anna M. Rule, Philadelphia.—p. 73.
Prenatal Treatment of Syphilis: Results of Antisyphilitic Treatment of Series of Five Hundred and Nineteen Pregnant Syphilitic Colored Women. J. R. McCord, Atlanta, Ga.—p. 78.
Histologic Study of Placentas from Syphilitic Parturients: Statistical Analysis of Three Hundred and Sixty-One Cases of Syphilis and Pregnancy. J. R. McCord, Atlanta, Ga.—p. 83.
Pseudohypertrophic Muscular Dystrophy Occurring with Syphilis. F. G. Lindemulder, Ann Arbor, Mich.—p. 86.
Peripheral Neurosyphilis Affecting Left Common Peroneal Nerve. W. M. Sheppe and A. L. Osterman, Wheeling, W. Va.—p. 90.
*Late Cutaneous Syphilis. P. A. O'Leary and J. R. Rogin, Rochester, Minn.—p. 98.
Making Gold Sol for Spinal Fluid Tests. B. S. Levine, Chicago.—p. 103.
Influence of Temperature on Time Required for Inactivation in Kahn Reaction. W. L. Hardesty and Alma Jurischk, Port Arthur, Texas.—p. 110.
Method for Staining Spirochetes and Molds with Aniline Dyes. R. E. Olsen and C. V. Weller, Ann Arbor, Mich.—p. 113.

Reactions Following Administration of Arsphenamines.—A review of 2,100 cases of syphilis in which the patients received arsphenamine therapy was made by Ireland, with particular reference to the types and prevention of reactions and complications due to arsphenamine administration. Of this number 11.2 per cent had various symptoms of intolerance to arsphenamine. The probability of reaction is approximately twice as great in females as in males even when dosage is proportional to weight. Arsphenamine as usual was responsible for a higher percentage of reaction. The most common type of reaction encountered was that of the gastro-intestinal system with its various manifestations. No one type of syphilitic involvement appeared to predispose to intolerance. Of the reactions observed, 72.5 per cent occurred early in treatment between the first and the tenth injection. High dosage, rapid injection, and insufficient dilution of arsphenamines tend to produce more frequent and more severe reactions. Among the methods of prevention of reactions, preliminary administration of (1) atropine sulphate in adult doses of 1/75 grain (1 mg.) hypodermically, (2) epinephrine hypodermically, (3) ephedrine by mouth, (4) calcium gluconate intravenously and the use of vehicles other than distilled water are found to be the most promising. The Bezredka antianaphylaxis technic of dividing the dose, too, is often useful. Complete physical appraisal of the patient before treatment, and the use of preparatory treatment with heavy metal and iodide in patients with important syphilitic visceral disease, are important. The prevention of reaction is important since nearly a fifth of the author's patients stopped treatment because of unpleasant or incapacitating complications. The pathogenesis of nearly all types of reaction is still obscure in spite of diligent studies into the modes of production. A survey of the literature of the past six years reveals a large and diversified list of reactions, but the number of severe and fatal reactions is few when the large number of patients under treatment is considered.

Urinary Excretion of Phenolsulphonphthalein After Arsphenamine.—According to Roth, the maximum tolerated dose of arsphenamine administered intravenously to rabbits almost always produces within forty-eight hours a marked fall in the urinary excretion of phenolsulphonphthalein. The curve of the urinary excretion of phenolsulphonphthalein after arsphenamine usually returns to normal in about seven days. The decreased urinary output of phenolsulphonphthalein after arsphenamine is accompanied by the presence of casts and albumin, although the latter may be present with the phenolsulphonphthalein output practically normal. Effects on the kidney may be caused by widely spaced repeated injections of arsphenamine even though none may have been produced by previous doses. The study of the urinary excretion of phenolsulphonphthalein together with the observations in the urine of

formed elements and albumin appear to be useful guides but in nowise final measures for determining renal involvement after arsphenamine.

Acetarsone in Prophylaxis and Treatment of Trypanosomiasis and Syphilis.—Kolmer reports that the minimal single lethal dose of acetarsone of American manufacture for rabbits by oral administration was from 0.8 to 1.5 Gm. per kilogram. The maximum single tolerated dose by oral administration for rabbits was from 0.3 to 0.8 Gm. per kilogram. The maximum multiple tolerated dose by oral administration for rabbits was from 0.02 to 0.03 Gm. per kilogram daily for about fourteen days. Acetarsone by oral administration is much more toxic for rabbits than for rats. In the former the large amounts produce emaciation and diarrhea with acute enteritis, cloudy swelling of the tubular epithelium of the kidneys and fatty degeneration of the liver. Doses of 0.02 Gm. per kilogram daily for fourteen days did not produce these changes. Acetarsone by oral administration in single doses as high as 0.3 Gm. per kilogram did not prevent trypanosomiasis in rats infected with Trypanosoma equiperdum. But three daily doses of from 0.03 to 0.04 Gm. per kilogram for three to five days prevented trypanosomiasis of rats. Single doses of 0.3 Gm. per kilogram by oral administration were without curative activity in trypanosomiasis of rats. Multiple doses of 0.03 to 0.04 Gm. per kilogram daily for from seven to nine days proved curative in trypanosomiasis of the rat. The minimal single dose of acetarsone by oral administration capable of aborting syphilis in rabbits was about 0.15 Gm. per kilogram. About 0.01 Gm. per kilogram three times a day for a week also prevented syphilis of rabbits following intratesticular inoculation with Spirochaeta pallida. The minimal single curative dose of acetarsone by oral administration in syphilis of the rabbit was found to be more than 0.2 Gm. and probably less than 0.5 Gm. per kilogram. A dose of 0.01 Gm. per kilogram three times a day for seven days followed by a rest period of five days and a repetition of the course for a total of eight courses proved curative in acute testicular syphilis of rabbits. If the single maximum tolerated dose of acetarsone for the rabbit by oral administration is taken as 0.5 Gm. per kilogram (it varies from 0.3 to 0.8 Gm.) and the minimal single curative dose at 0.25 Gm., the chemotherapeutic index for acute testicular syphilis of this animal is about 2. The author does not recommend acetarsone orally for the abortive (prophylactic) treatment of human syphilis. He believes, however, that acetarsone orally is probably useful for "follow-up" or "consolidation" therapy, after courses of the trivalent arsenicals or bismuth compounds, in the treatment of syphilis of those individuals possessing sufficient tolerance for this agent.

Late Cutaneous Syphilis.—O'Leary and Rogin studied 100 cases in which a diagnosis of late cutaneous syphilis had been made on the average of ten years before the time of the survey, and reexamination carried out following intensive treatment. Among the 100 cases, evidence of syphilis was encouraged in the viscera or nervous system in forty-five. But more significant was the observation that these visceral manifestations of the disease were usually of a mild type, the exception being two cases of hepatitis with cirrhosis. A similar observation was made in the group in which serologic or clinical signs of neurosyphilis were manifest. In seventeen of twenty-four cases the serologic tests were reversed to negative; in four of them the reversal was spontaneous. In three of the cases in which reversal did not take place, the serologic tests remained weakly positive; in the remaining four the present status is unknown. The authors have seen six cases of neurosyphilis in which cutaneous gummas developed following malarial treatment, in all with decided clinical and serologic improvement.

American Journal of Tropical Medicine, Baltimore

12: 1-100 (Jan.) 1932

Cultivation of Bacillus Leprae with Experimental Lesions in Monkeys. M. H. Soule and E. B. McKinley, San Juan, Porto Rico.—p. 1.
Experimental Amebiasis in Dogs. E. C. Faust, New Orleans.—p. 37.
Experimental Studies on Chagas' Disease in Panama. H. C. Clark and L. H. Dunn, Ancon, Panama Canal Zone.—p. 49.
Technical Precautions Employed in Maintaining Virus of Yellow Fever in Monkeys and Mosquitoes. A. W. Sellards, Boston.—p. 79.
Further Incrimination of Anopheles Darlingi Root as Transmitter of Malaria. N. C. Davis and H. H. W. Kumm, Rio de Janeiro, Brazil, South America.—p. 93.
Outline of Culture Character Studies of Undescribed Species of Cryptococcus. G. W. Cooper, Port au Prince, Haiti.—p. 97.

Archives of Dermatology and Syphilology, Chicago

25: 205-418 (Feb.) 1932

Mental Allergy: Report of Case of Seborrheic Eczema with Recurrences Dependent on Emotional Background. J. H. Blaisdell, Boston.—p. 205.
*Physical Therapy in Dermatology: An Appraisal Based on Results in Practice. H. J. Parkhurst, Toledo, Ohio.—p. 213.
*Kline Finger Blood Precipitation Test for Syphilis: Comparative Study With Wassermann and Kahn Methods, with Clinical Evaluation in More Than Five Hundred Cases. J. J. Eller and C. R. Rein, New York.—p. 239.
LIX.: Lipids of Skin: Review. D. J. Kooyman, St. Louis.—p. 245.
*Roentgenotherapy of Spinal Region in Dermatology. H. R. Foerster, Milwaukee.—p. 256.
*Therapeutic Uses of Bacteriophage in Pyodermias. A. C. Cipollaro and Adele E. Sheplar, New York.—p. 280.
*Cephalosporiosis: An Unusual Mycotic Infection. H. E. Miller and H. Morrow, San Francisco.—p. 294.
*Lupus Erythematosus: An Evaluation of Histopathologic Examinations. W. H. Goeckerman and H. Montgomery, Rochester, Minn.—p. 304.
Idiopathic Trichoclasis: Report of Case. C. R. Halloran, Los Angeles. —p. 317.
Recurrence or Reinfection in Ringworm of Hands and Feet: Study of Persistence of Organism in Tissues. R. C. Jamieson and Adelia McCrea, Detroit.—p. 321.
Sarcoid Associated with Tuberculosis of Larynx: Report of Case. J. R. Allison and P. V. Mikell, Columbia, S. C.—p. 334.
*LVIII.: Multiple Disseminated Angiomas: Report of Case. C. J. Lunsford, Oakland, Calif.—p. 344.
Fungistasis in Ringworm of Toes and Feet: II. Two Per Cent Mercurochrome-220 Soluble and Liquor Hexylresorcinolis 1:1,000 (S. T. 37). A. G. Gould and Edna K. Carter, Ithaca, N. Y.—p. 348.
Lupus Erythematosus Subacutus with an Unusual Blood Picture: Clinical Study. L. Hollander, G. J. Kastlin, A. Fisher and Clara R. Schlesinger, Pittsburgh.—p. 353.
Syphilis as a Shameful Disease. D. W. Montgomery, San Francisco. —p. 365.

Physical Therapy in Dermatology.—A series of 7,206 cases, constituting his private dermatologic practice for more than nine years, is analyzed by Parkhurst with regard to the effectiveness of treatment with roentgen rays, radium, ultraviolet rays, electrolysis and electrodesiccation. In this series, 3,541 patients received at least one of these forms of therapy. In each condition of the skin treated by one of the foregoing methods, the number and percentage of cures, recurrences and failures are recorded. On the basis of his observations the author concludes that while the roentgen rays are probably the most valuable single therapeutic agent in dermatology, too much reliance must not be placed on their use alone, and they must not be used excessively. It is recommended that their effectiveness be reinforced by the simultaneous employment of any other measures that may be of value, provided they are not too irritating. Recurrences of many conditions of the skin may often be prevented if the patient follows certain precautions in the care of the skin or scalp, and often in the diet. Such prevention is better than too many roentgen treatments. Unpreventable recurrences must be handled cautiously, and other applications should be substituted for the roentgen rays when possible. Electrodesiccation is considered another valuable method of treatment, and the one that seems most suitable for the removal of warts, moles, keratoses, leukoplakia, telangiectases, molluscum contagiosum, granuloma pyogenicum, xanthelasma and a number of other conditions, and at least a valuable aid to irradiation in the treatment for epitheliomas. Electrolysis was found to be the best procedure for the permanent removal of hair. For other purposes, desiccation was preferred. Radium is judged only partially, with regard to the effectiveness of a 10 mg. half-strength flat applicator, which was not employed extensively. It was found useful for removing cavernous angiomas, but in many such cases electrodesiccation was considered possibly the method of choice. Ultraviolet rays, as produced by a water-cooled mercury arc lamp, were found to be of uncertain value as a local irritant in cases of alopecia areata and apparently helpful in the healing of certain sluggish ulcers. They were somewhat beneficial when applied under pressure to nevus flammeus, but they were never completely effective, even after long periods of treatment. The air-cooled lamp was not used, and its possible value is therefore not considered.

Kline Finger Blood Precipitation Test for Syphilis.—For their comparative study, 545 specimens of blood were obtained by Eller and Rein from the finger and defibrinated for the finger blood test. At the same time, a larger quantity of blood from the arm was obtained to furnish serum for the Wassermann, Kahn and microscopic slide precipitation tests.

Furthermore, in 280 cases sufficient defibrinated finger blood was obtained for additional heated serum slide tests. Fifty-nine per cent of the blood specimens were obtained from patients with proved cases of syphilis. The evaluation of the results of this comparative study was made according to the method of Kahn as follows: positive reaction, 4 plus, 3 plus and 2 plus; doubtful reaction, 1 plus and plus or minus, agreement, positive or negative by both methods; relative agreement, positive or negative by one method and doubtful with the other; disagreement, positive by one method and negative with the other. It was found that the Kline finger blood test was more sensitive than the Wassermann and Kahn tests and as sensitive as the heated serum microscopic slide precipitation test. No false positive reactions occurred in any of the tests in this series. The finger blood test gave results that agreed more frequently with the clinical condition of the patients than those of the Wassermann and Kahn tests. Since this test requires but a small amount of easily obtainable finger blood, it is particularly useful in the diagnosis of syphilis in infants, children and obese patients in whom venipuncture is difficult. It is also useful in checking the suitability of blood donors immediately before transfusion. In addition, it may be used as a method for the immediate diagnosis of syphilis in a dermatologic clinic.

Roentgen Therapy of Spinal Region in Dermatology.—A study of roentgen irradiation of the spinal region leads Foerster to conclude that this form of therapy is the most satisfactory method of treating patients for acute or subacute generalized lichen planus, and that it is of considerable value in chronic generalized cases of this disease. When definite improvement is not observed after two treatments, he considers it advisable to employ other measures, either alone or in conjunction with additional spinal irradiation. In dermatitis herpetiformis considerable benefit and, in some instances, recovery may be expected from this method of treatment. It appears that in this disease repeated spinal treatments are required. In the management of chronic generalized eczema and neurodermatitis, spinal irradiation is useful. In the posteruptive neuralgia of herpes zoster this method of treatment is of distinct benefit, and it may shorten the course of the intensity of the zoster eruption.

Therapeutic Uses of Bacteriophage in Pyodermias.—On the basis of their observations in 108 unselected cases of pyodermia, Cipollaro and Sheplar conclude that bacteriophage is a valuable therapeutic agent in dermatology. Most of the patients treated showed marked improvement soon after the institution of treatment, but not all those treated were cured. In the cases studied, no reactions were noted following the swabbing or application of wet dressings of bacteriophage on the lesions. In a few cases, two types of reactions were noted following the injection of bacteriophage subcutaneously at a site distant from the lesions. They were: 1 *a*. Local reaction at the site of injection. This consisted in redness, pain and edema at the point at which the bacteriophage was administered. The involved area varied in size, depending on the severity of the reaction. Sometimes the entire arm became red, swollen and tender, and the reaction persisted for several days. 1 *b*. Local reaction at the site of the lesion. In a few instances, particularly in cases of multiple furunculosis, there was seen an increase in redness and swelling at the periphery of each lesion. Pain was absent. In other words, although the inflammatory process appeared to be more severe, the subjective symptoms were less. The reaction at the site of the lesion resulted not from the application of bacteriophage to the lesion but from the injection of bacteriophage into the arm, subcutaneously, away from the lesions. 2. Systemic reaction. In a few cases a generalized systemic reaction followed the administration of bacteriophage subcutaneously. This reaction consisted in increase in temperature, malaise and vomiting. In no case was there a generalized reaction without a local reaction at the site of the lesion. All lesions showed marked improvement after a reaction.

Cephalosporiosis.—Miller and Morrow report a case in which the patient had a gumma-like lesion of the soft palate and tonsillar region from which a fungus was isolated and tentatively classified as Cephalosporium. Five cases of human lesions due to this Sporotrichum-like organism have been reported in the foreign literature in the past few years. Similar cases have not previously been reported by American observers. The organism, injected intraperitoneally and subcutaneously, was found to be nonpathogenic for the rat, guinea-pig and rabbit. The disease cleared up in three weeks under the use of large doses of potassium iodide and roentgen therapy. The true pathogenic rôle of Cephalosporium has not been proved in this case or in most of the reported cases. The similarity of the lesion in this patient to those previously described, the exclusion of other etiologic organisms and the response to therapy seem to justify the diagnosis of cephalosporiosis.

Lupus Erythematosus.—According to Goeckerman and Montgomery, a combination of histologic changes has gradually become recognized as being of real diagnostic value in lupus erythematosus. Their study of twenty-six cases of the discoid type and eighteen of the disseminate type has convinced them that these changes are practically always present in a degree to be distinctive. In addition to these, the absence of proliferative vascular changes and the common occurrence of pigment in chromatophores may be of diagnostic value in some cases, but formation of collacin cannot be regarded as particularly significant. A number of changes that have at times been emphasized are merely incidental. The changes in the discoid and disseminate types are the same and vary only in degree; a sharp dividing line cannot be drawn. Because of the varied and sometimes puzzling clinical manifestations of lupus erythematosus, the aid of the laboratory in diagnosis is desirable. If due consideration is given to the relative merits and the combination of histologic changes, examination of tissue should prove a valuable aid in distinguishing lupus erythematosus from other lesions of the skin.

Multiple Disseminated Angiomas.—Lunsford describes a case of multiple angiomas in a baby in which approximately 834 lesions were present. The lesions were successfully treated with carbon dioxide snow. The application of radium is impracticable in the presence of so great a number of lesions.

Archives of Surgery, Chicago

24: 171-338 (Feb.) 1932

*Bacteriology of Abscess of Lung and Methods for Its Study. J. Cohen, New York.—p. 171.
*Intra-Abdominal Method of Removing Inguinal and Femoral Hernia. G. P. LaRoque, Richmond, Va.—p. 189.
*Aerodynamics of Bronchial Obstruction. G. E. Lindskog, New Haven, Conn., and C. M. van Allen, Peiping, China.—p. 204.
So-Called Fibrosarcoma of Bone: Bone Involvement by Sarcoma of Neighboring Soft Parts. C. F. Geschickter, Baltimore.—p. 231.
Complication of Tarry Luteal Cysts. E. S. J. King, Melbourne, Australia.—p. 292.
Retroperitoneal Lipoma: Report of Case in Which Tumor Weighed Twenty-Two and One-Half Pounds. R. B. Bettman, Chicago, and J. Serby, Waterville, N. Y.—p. 300.
*Rapid Method of Protecting Peritoneum Against Peritonitis. B. Steinberg, Toledo, Ohio.—p. 308.
*Treatment of Intussusception: Report of Case with Perforation. H. J. Shelley, New York.—p. 318.
Forty-Sixth Report of Progress in Orthopedic Surgery. P. D. Wilson, L. T. Brown, M. N. Smith-Petersen, J. G. Kuhns and E. F. Cave, Boston; R. K. Ghormley, Rochester, Minn.; M. S. Danforth, Providence, R. I.; G. Perkins, London, England; A. van Dessel, Louvain, Belgium, and C. H. Bucholz, Halle, Germany.—p. 325.

Abscess of Lung.—In sixteen cases of abscess of the lung in which pus was obtained at operation, Cohen found the "doubtful" anaerobic streptococcus and the diphtheroid in every case. The three organisms most commonly found in abscess of the lung were Streptococcus gamma, diphtheroid and Bacterium melaninogenicum. The flora is rich and varied and seems to occur in combinations of organisms. In the sixteen cases of abscess of the lung studied, in which pus was obtained at operation, streptococcus, diphtheroid and B. melaninogenicum were found in fourteen cases. In addition to the last three organisms, Bacillus fusiformis was also found in five cases, making one combination; Bacillus ramosus was found in another five cases, making another combination, and Bacillus fragilis was found in still another five. Noteworthy, also, was the close symbiosis of the two organisms most commonly found in abscess of the lung, Streptococcus gamma and B. melaninogenicum. These facts raise the question whether this combi-

nation of organisms has a bearing on the etiology of abscess of the lung. This work will be the subject of another report.

Intra-Abdominal Method of Removing Inguinal and Femoral Hernia.—LaRoque describes a method of approach for removing the sac of inguinal and femoral hernia from within the abdominal cavity. The usual hernia incision is made, perhaps slightly higher than usual, and the aponeurosis of the external oblique is exposed and divided as in the ordinary operation. The muscle fibers of the internal oblique and the transversalis are separated, and the peritoneum is opened just as if an appendectomy were going to be performed. From the peritoneal side it is easy to recognize and distinguish between hernia into the inguinal and femoral canals, direct and indirect inguinal hernia, unusual and anomalous types of hernia, the amount of redundant peritoneum and preperitoneal fat in and about the canal, the exact location of the bladder, vas deferens and important vessels, and whatever complications may exist. In cases of strangulated or incarcerated hernia and of hernia with an anomalous type of sac, it needs little discussion to see the advantages of an approach from above. Incarcerated and adherent structures are safely separated from the hernial sac; restoration of circulation in the bowel occurs more promptly with the bowel free in the peritoneal cavity and the vessels free from traction; ligation and removal of omentum and resection of gangrenous bowel are more safely done under good exposure; and coincident pathologic changes in the region of the hernial orifice may be recognized and dealt with if desired. Dissection of the sac is greatly facilitated by enucleation from above, beginning in the natural line of cleavage between the peritoneum and its nonadherent coverings above the neck. The line of cleavage is easily found; enucleation downward in the natural direction beneath the fascia is done with little trauma to the cremaster, internal oblique and other muscles of the region. The bladder and structures of the cord, continuously in view, are gently brushed away and preserved from injury as enucleation proceeds. After removal of the sac, suture of the peritoneum is made at a point as high as desirable, sometimes 2 or 3 inches (5 to 7.5 cm.) above the original location of the neck of the hernia, and, if one chooses, by catching the transversalis fascia the peritoneal suture is fixed to a higher position. Whatever plastic procedure is the preference of the individual surgeon or the most suitable for the individual case may be employed in closing the canal and wound, and one is certain at the conclusion of the operation that the hernial sac is completely removed; and, unless serious infection of the wound occurs, postoperative rupture will not follow. The author has been able to reexamine several hundreds of so-called difficult hernias of large size, and he has seen a sufficient number of these put to the test of hard work, heavy lifting and other straining efforts to lead him to the conclusion that this method of operating will permit the surgeon of average ability to be rewarded by a percentage of cures so much higher than that obtained by the better operative surgeons by the old method that the superiority of the abdominal approach admits of little debate.

Aerodynamics of Bronchial Obstruction.—Lindskog and van Allen investigated the principles of behavior of the intrapulmonary pressures and currents of air in bronchial obstruction in a series of experiments. The various types and positions of obstruction that have been described in man and the forms of breathing that accompany them were reproduced in dogs, and the air pressures and currents were measured and observed directly. The behavior was found to be consistent and to follow certain rules, so that principles of aerodynamics of bronchial obstruction were formulated. Of particular interest was the difference that was found between the aerodynamics of lobar and of lobular obstructions. Collateral respiration was found to be responsible for this difference. The results of the study also afforded clarification for certain obscure clinical phenomena of bronchial obstruction, particularly for the inconstant effects of cough on material occluding the bronchi and for the relationship between valvular bronchial obstruction and atelectasis. The clinical condition of obstructive emphysema was reproduced experimentally, and knowledge of its nature was advanced.

Rapid Method of Protecting Peritoneum Against Peritonitis.—According to Steinberg, protection against peritonitis can be obtained by the intraperitoneal injection of colon bacilli (culture 300). Protection secured with heat-killed colon bacilli is greater than that obtained with a mixture of the virulent organisms usually found in appendicitis and peritonitis. The protection secured is not a true immunity process but a hyperleukocytosis and phagocytosis due to a coincident presence of polymorphonuclears at the site of infection. The term hyperleukocytic preimmunity is suggested for this process. On the basis of experiments on animals, a method is introduced that is applicable in the prevention of peritonitis in man following surgical intervention in the intestinal tract. The protection can be achieved in four days, allowing the performance of the operation on the fourth or the fifth day after the first immunizing dose.

Treatment of Intussusception.—Shelley gives a detailed outline of the treatment for intussusception, particularly of the more severe types. He reports a case of intussusception that occurred in a child, aged 15 months. In this case the intussusception had perforated, and was irreducible and gangrenous. It was treated by a modified Mikulicz resection, with drainage of the peritoneal cavity. The child was apparently well on the road to permanent recovery when, in the eleventh postoperative week, he contracted whooping cough, from which he died three months after the original operation.

Canadian Public Health Journal, Toronto

23: 51-102 (Feb.) 1932

Economic Value of Public Health. H. M. Cassidy, Toronto.—p. 51.
Water Purification. G. G. Nasmith, Toronto.—p. 59.
Place of Mental Hygiene in Public Health Program. A. G. Fleming, Montreal.—p. 66.
Aids to Registration in Vital Statistics. D. Mackie.—p. 73.
Isolation of the Colon Group in Water. N. J. Howard, Toronto.—p. 82.
Vapor Baths in Trans-Canada Highway Camps. A. H. Perry, St. Catharines, Ont.—p. 86.

Delaware State Medical Journal, Wilmington

4: 21-56 (Feb.) 1932

Postencephalitic Behavior and General Practitioner. E. D. Bond, Philadelphia.—p. 21.
Modern Psychiatry. M. A. Tarumianz, Farnhurst.—p. 23.
Mental Hygiene Service. P. F. Elfeld, Farnhurst.—p. 28.
Multiple Myeloma: Report of Case. J. W. Ballard, Farnhurst.—p. 30.
Problems of Children. C. Uhler, Farnhurst.—p. 32.
Observation Clinic in Delaware. C. R. Bennett, Farnhurst.—p. 33.
Psychosis Due to Organic Brain Disease (Brain Tumor). C. R. Bennett, Farnhurst.—p. 40.
Multiple or Disseminated Sclerosis. M. Littner, Farnhurst.—p. 42.
Scope of Clinical Psychology. Lois Garrett, Farnhurst.—p. 44.
Tests Used in Mental Hygiene Clinic and What They Measure. M. M. Font, Farnhurst.—p. 45.
Psychiatric Social Work as Factor in Mental Hygiene Clinic. Audrey D. Deniston, Farnhurst.—p. 48.
Importance of Social Histories in Mental Hospitals. Zilpha Guilfoil, Farnhurst.—p. 50.
Community Participation in Community Clinic. Kathryn S. Butler, Farnhurst.—p. 51.

Journal of Lab. & Clinical Medicine, St. Louis

17: 399-506 (Feb.) 1932

*Experimental Adrenal Exhaustion. C. W. Edmunds and R. G. Smith, Ann Arbor, Mich.—p. 399.
Poliomyelitis. R. W. Meals and A. G. Bower, Los Angeles.—p. 409.
*Carbon Monoxide Acute and Chronic Poisoning and Experimental Studies. T. L. Ramsey and H. J. Eilmann, Toledo, Ohio.—p. 415.
Endogenous Uric Acid and Hematopoiesis: III. Uric Acid Outputs and Reticulocyte Counts as Affected by Glycine, Caffeine, Urea, Bilirubin, Atophan and Xylose. J. Krafka, Jr., Augusta, Ga.—p. 428.
*Gingivitis: Chemotherapeusis as an Aid in Diagnosis and Treatment: Preliminary Report. H. M. Cobe, Philadelphia.—p. 437.
Merthiolate as Skin Disinfecting Agent. H. H. Marks, H. M. Powell and W. A. Jamieson, Indianapolis.—p. 443.
Treatment of Rheumatic Fever with a Magnesium Cinchophen, Magnesium Oxide (Magnephen) Preparation. E. Tolstoi and Doreen R. Corke, New York.—p. 450.
Prediabetic State: Its Treatment by Low Carbohydrate Diet and Reduction of Weight. J. D. Tyner, Clifton Springs, N. Y.—p. 456.
Sterilization and Standardization of Papain Preparations Intended for Surgical Use. R. P. Walton, New Orleans.—p. 459.

Experimental Suprarenal Exhaustion.—Edmunds and Smith describe experiments in which they demonstrated that the intramuscular injection of physostigmine in dogs is followed by a diminution in the epinephrine content of the suprarenals at the end of five hours to about one third of the normal, and at the end of thirty hours the depletion is even greater. Such animals exhibit marked symptoms of weakness

and apathy. The glands gradually replace the active principle, so that at the end of another twenty-four hours the amount in them approaches the normal. If physostigmine administration is continued over a period of two or more days, the glands are depleted to such an extent that they contain only about an eighth of the normal amount. Such animals are very weak and they may die. Studies were made also on animals with such depleted suprarenals to see whether evidence could be secured on the existence of a possible precursor substance for the epinephrine. For this purpose tyrosine and also dihydroxyphenylalanine were administered, and the suprarenals were then examined at varying intervals to see whether the course of the curve as described was changed. Tyrosine apparently had no effect, but the dihydroxyphenylalanine seemed to exert a favorable influence; but a positive statement could not be made on account of the wide variations between different animals.

Acute and Chronic Carbon Monoxide Poisoning.—Ramsey and Eilmann present experimental evidence that carbon monoxide is not rapidly eliminated from the body unless other measures than simple respiration of air are used. It appears that in acute cases death is caused entirely by anoxemia and respiratory failure. The body after death is capable, even after embalming, of absorbing sufficient carbon monoxide, when concentrated and with sufficient time of exposure, to produce all the macroscopic appearances and positive chemical changes of death due to this gas. It is possible also to produce similar changes by injecting the body with either laked or whole blood, saturated with carbon monoxide. These possibilities are of grave medicolegal importance.

Gingivitis.—Cobe believes that chemotherapy is definitely indicated in gingival infections. The cooperation of the laboratory and the dentist is necessary in suggesting the proper antiseptic to use in the treatment of gingival infections such as streptococcal gingivitis, ulceromembranous gingivitis and pyorrhea. Gingival infections due to gram-negative organisms respond to treatment better and more rapidly than do those due to gram-positive organisms. There seems to be no basis for the idea prevalent in medical minds that the gram-positive organisms respond more successfully to the dyes than to the mercurials. Gingival cultures show a diversified bacterial flora with a large percentage of molds and 89 per cent of streptococci present in lesions. For chemotherapeutic diagnosis, inoculation by stroke and stab is necessary and direct inoculation gives the most accurate results. Merthiolate, metaphen, a mixture of acriflavine and gentian violet, and phenol were found to be the four antiseptics of highest bacteriolysis of eleven used in a series of fifty cases. In treatment, the use of two or more of the bacteriolytic antiseptics used alternately and in combination with arsphenamine has been found to give the most satisfactory results and with fewer recurrences.

Kentucky Medical Journal, Bowling Green

30: 101-166 (March) 1932

Neoplasms of Kidney, Their Diagnosis and Treatment. J. B. Stites, Louisville.—p. 110.
Bright's Disease, Pathologic Types. E. S. Maxwell, Lexington.—p. 111.
Clinical Types of Nephritis. C. W. Dowden, Louisville.—p. 115.
Intravenous Urography. E. H. Ray, Lexington.—p. 122.
Dietetic Principles. F. G. Speidel, Louisville.—p. 127.
General Management of Diabetic. A. E. Cohen, Louisville.—p. 129.
Treatment of Diabetic Coma. A. T. Hurst, Louisville.—p. 131.
Surgical Aspects of Diabetes. M. J. Henry, Louisville.—p. 132.
Oculoglandular Tularemia, with Bilateral Optic Neuritis, Resulting in Complete Blindness: Case. G. F. Doyle, Winchester.—p. 137.
Syndromes of Chronic Epidemic Encephalitis. J. J. Moren, Louisville.—p. 139.
Proper Use and Selection of Diuretics. G. Dyer, Buechel.—p. 143.
The Relationship Between the Doctor, the Surgeon and the Patient. E. A. Stevens, Mayfield.—p. 145.
Recent Advances in Preanesthetic Medication. H. E. Richey, Louisville.—p. 152.
Ocular Manifestations of Systemic Diseases. L. Jacobs, Covington.—p. 161.

Maine Medical Journal, Portland

23: 25-40 (Feb.) 1932

Early Diagnosis of Pregnancy. M. Davis, Boston.—p. 27.
Social Insurance. E. H. Ochsner, Chicago.—p. 34.
State Department of Health: Division of Social Hygiene. W. L. Holt, Augusta.—p. 36.

Medicine, Baltimore

11: 1-139 (Feb.) 1932

*"Bothriocephalus Anemia." Diphyllobothrium Latum and Pernicious Anemia. I. W. Birkeland, Rochester, Minn.—p. 1.

"Bothriocephalus Anemia."—Birkeland presents a thorough review of the literature that has a bearing on the subject of Diphyllobothrium anemia. The following summary may be given as the essence of the study: The great majority of persons who harbor the fish tapeworm in their intestines suffer no ill effects from this parasitism. In some cases there will be a variety of clinical manifestations without anemia. The symptoms may be referable to the central nervous system in the form of neurotic states, other functional disturbances or "fits"; to the alimentary tract, usually in the form of functional disorders, irregularities of the bowel, or, rather significantly, stomatitis or glossitis; or finally to the blood, which may present slight changes suggestive of incipient anemia. The altered blood picture in nonanemic carriers has been defined as an abortive form of Diphyllobothrium anemia. Tabulation of these cases shows a gradual transition from an entirely normal condition of the blood to a state of definite anemia. The line between a nonanemic and an anemic blood picture had been arbitrarily drawn at a level for erythrocytes of 4,000,000 for each cubic millimeter. With few exceptions, Diphyllobothrium anemia runs true to type. As a rule it is indistinguishable from cryptogenic pernicious anemia, clinically, hematologically and pathologically. Achlorhydria is present in about 84 per cent of cases of Diphyllobothrium anemia. When hydrochloric acid is present, the acidity is usually below the average level. Follow-up studies have shown a return of gastric acidity in more than a third of the cases in which there is achlorhydria. There is a definite influence of age on this particular feature; preservation of gastric acidity is greatest before the age of 20 and gradually diminishes with increasing age. Subacute combined sclerosis has not been thoroughly investigated in association with the anemia under consideration. Numbness and tingling in the hands and feet are not uncommon complaints; the vibratory sense was in one instance referred to; gross lesions of the spinal cord seem to be extremely rare. Before the etiologic significance of the tapeworm had been duly recognized, the same grave prognosis prevailed in Diphyllobothrium anemia as existed for cryptogenic pernicious anemia until the introduction of treatment with liver. Systematic anthelmintic measures, which were adopted about 1885, reduced the mortality from nearly 100 per cent to about 12 per cent. The cure is remarkably permanent.

New Orleans Medical and Surgical Journal

84: 585-662 (Feb.) 1932

Physician's Responsibility in Reduction of Cancer Mortality. U. Maes, New Orleans.—p. 585.
Pregnancy or Fibroids. P. Graffagnino, New Orleans.—p. 589.
Chronic Cutaneous Ulceration of Lower Extremities. A. Ochsner, New Orleans.—p. 594.
Recurrent Dislocations of Shoulder. E. D. Fenner, New Orleans.—p. 607.
Chairman's Address. L. S. Gaudet, Natchez, Miss.—p. 611.
Heart Disease and the Diabetic. I. I. Lemann, New Orleans.—p. 612.
Some Observations with Dichlorobenzine Terpenolic Compound Vapor in Hemoptysis. E. A. Bertucci, New Orleans.—p. 620.
Roentgen-Ray Examination of Stomach. R. C. Finlay, Greenville, Miss.—p. 625.
Granny Magic. J. A. Crawford, Lake Charles, La.—p. 627.

Porto Rico J. Pub. Health & Trop. Med., San Juan

7: 119-283 (Dec.) 1931

Anemia in Porto Rico. B. K. Ashford, Porto Rico.—p. 119.
Pernicious Anemia and Sprue. J. Suárez, San Juan.—p. 145.
Clinical Investigation of Thirteen Cases of Anemia of Pernicious Type in Porto Rico. B. K. Ashford and J. A. Pons, Porto Rico.—p. 167.
Red Cell Count and Hemoglobin in Porto Rico from an Analysis of Hospital Cases. J. A. Pons, Porto Rico.—p. 203.
Syphilis in Porto Rico: I. Its Prevalence as Shown by Wassermann Reaction. O. Costa-Mandry, Porto Rico.—p. 209.
Some Observations on Variations of Brucella Abortus: Preliminary Report. P. M. Otero, San Juan.—p. 233.
Note on Leprosy. F. Peña-Trego.—p. 239.

Public Health Reports, Washington, D. C.

47: 427-477 (Feb. 19) 1932

Relation Between Trypanocidal and Spirocheticidal Activities of Neoarsphenamine: II. Spirocheticidal Activity as Measured by Prophylactic Power of Neoarsphenamine. T. F. Probey.—p. 429.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

13: 1-108 (Feb.) 1932

Serologic Differentiation of Smooth Strains of Brucella Group. G. S. Wilson and A. A. Miles.—p. 1.
*The "Killing" of Bacteria by Bacteriophage. C. H. Andrewes and W. J. Elford.—p. 13.
*Plasma Phosphatase: III. Clinical Method for Determination of Plasma Phosphatase. H. D. Jenner and H. D. Kay.—p. 22.
The Standardization of Antidysenteric Serum (Shiga). J. Zozaya.—p. 28.
Cross-Immunity Between South African Typhus and Tick-Bite Fever. A. Pijper and Helen Dau.—p. 33.
Filtration of Vaccinia Virus Through Gradocol Membranes. W. J. Elford and C. H. Andrewes.—p. 36.
Some Observations on Agglutination of V. Cholerae. Y. B. Obdoosh.—p. 42.
Effect of Streptococcal Toxin on Chinchilla Rabbits. F. H. Fraser and M. A. Ross.—p. 51.
*Production of Coccal Forms of C. Diphtheriae in Mediums Containing Copper. C. G. Pope and S. Pinfield.—p. 60.
Nature of Elementary Bodies in Psittacosis. S. P. Bedson.—p. 65.
Nonapplicability of Schütz-Borissow Law in Estimation of Pepsin Activity by Mett's Method. Jocelyn Patterson and J. Adler.—p. 72.
Serum Bilirubin: I. Diazo Reaction as Quantitative Procedure. F. D. White.—p. 76.
Influence of Bacterial Cell on Phage-Antiphage Reaction. C. H. Andrewes.—p. 85.
Observations on Growth Requirements of Vaccinia Virus in Vitro. H. B. Maitland, A. W. Laing and R. Lyth.—p. 90.
Curative Action of Antipneumococcus Serum (Type I) in Mice. G. F. Petrie and W. T. J. Morgan.—p. 96.

"Killing" of Bacteria by Bacteriophage.—Andrewes and Elford report that a specific phage added in excess to Bacillus coli can within a few minutes, and perhaps within a few seconds, so affect the organisms that they are rendered incapable of propagation; in other words, it apparently "kills" them immediately. At 37 C., lysis of these "killed" organisms follows in twenty to thirty minutes. At 20 C., though the "killing" has taken place at once, lysis may not be demonstrable or may occur only after some hours. Sodium citrate seems to act on this coli-phage by preventing its multiplication. It cannot prevent "killing" of Bacillus coli if phage is added in excess, but such "killed" organisms will not lyse if citrate is present.

Plasma Phosphatase.—Jenner and Kay describe a method for the determination of plasma phosphatase, suitable for use in the clinical laboratory. It requires only small quantities of plasma (2 cc. is ample; determinations may be done on 1 cc. or even less), and may be completed, from the drawing of blood to the working out of the final value in four hours. Other than the usual laboratory glassware, the only apparatus required is a colorimeter.

Production of Coccal Forms of Corynebacterium Diphtheriae.—Pope and Pinfield note that the growth of Corynebacterium diphtheriae on digest medium containing 20 mg. of copper per liter gave a wholly coccal form of organism, provided sterilization had been carried out by filtration through Berkefeld candles. When the medium had been sterilized by heat, the growth consisted of mixed short bacillary and coccal forms. The coccal forms produce little or no toxin.

British Journal of Radiology, London

5: 97-192 (Feb.) 1932

Some Recent Developments in Radiologic Examination of Gastro-Intestinal Tract. J. O'Sullivan.—p. 97.
*Gastrophotography. D. Levi and H. C. Gage.—p. 107.
Köhler's Disease of Metatarsal Head: Five Cases and Commentary. M. Mitman.—p. 115.
Ultraviolet Radiation from Carbon Arc and Its Dependence on Arc Length and Energy Input. E. A. Owens and P. Wright.—p. 120.
Intensity of Ultraviolet Radiation from Different Arcs and Its Dependence on Arc Length. E. A. Owen and P. Wright.—p. 135.
Model of Hydrogen and Helium Atoms. H. S. Souttar.—p. 148.
Roentgen-Ray Emulsion. O. Bloch.—p. 150.
Some Blood Examinations of Roentgen-Ray Workers. J. C. Mottram.—p. 156.
Thermo-Electric Instrument for Measuring Total Roentgen-Ray Energy with Determination of Practical Units. W. Moppett.—p. 159.
Radiography in Canada and United States. C. J. Bodle.—p. 169.
A Visit to Canada and the States. F. Melville.—p. 171.

Gastrophotography.—Levi and Gage call attention to the fact that if a photograph of the gastric mucosa is to be obtained, a camera that does not require focusing, and a bright light, must be introduced into the stomach. An instrument that fulfils these desiderata has been produced. The camera is mounted on the end of a rubber tube, 22 mm. in diameter, and is continuous with this tube. It is contained in a metallic cylinder of the same diameter. It is thus no more formidable than the stomach tube, and its passage down the esophagus is no more dangerous. The camera consists of two groups of four stereoscopic pinhole cameras, in each of which individual cameras face directions at right angles to each other, while being in the same horizontal plane. The two components of each stereoscopic camera are placed one vertically above the other. Between each battery of cameras is the electric flash lamp, and the electrical apparatus is so arranged that the patient is cut off from the mains before the flashlight is fused. The angle of vision of each camera is so wide that it is possible to obtain images covering the whole circumference of an enveloping container, over a zone whose vertical width would depend on the distance of its inner wall from the camera. The horizontal groups of cameras are placed with the nearest pinholes 30 mm. vertically apart, so that the two vertical zones also overlap, unless the containing walls are very close to the pinholes. The images on the films are only 5 mm. in diameter. The enlarged prints from them have a diameter of 7.5 cm. So brilliant is the flash, and so sensitive is the fine-grained emulsion of the film, that it is possible to obtain prints of excellent definition. The definition of the image depends, among other factors, on the distance of the object from the pinhole. It falls off with increasing distance. As the angle of vision of the camera is wide, the image of any particular object shrinks rapidly as it recedes from the pinhole, a fact necessary to keep prominently in mind in the interpretation of the photographs. The intensity of the flash has been arranged to give a good exposure at the average distance the stomach walls must be away from the pinholes to give pictures of a size that can be read. It can be readily discerned how unfavorably the law of inverse squares acts in the case of the more distant areas of the stomach. In these areas, not only is the definition poor and the image excessively small, but the illumination is nothing like the optimum to give the correct photographic exposure. When the camera is in the stomach, the pinholes of each group of cameras should look forward, backward, to the left and to the right. The images obtained are described as upper and lower lesser curvature, upper and lower posterior wall, upper and lower greater curvature to the left, and upper and lower anterior wall in front. Gastrophotography has enabled the authors to diagnose a very early gastric growth, and, in their opinion, it is an important addition to the armamentarium of the physician. Its chief field of usefulness lies in the great help it can give in photographing an area in the stomach on which the radiologist has cast suspicion. It is also of service to patients who present a syndrome of gastric disorder and in whom the barium meal is negative. Its third field of usefulness is the help it affords the physician in enabling him to watch the progress of his treatment on the course of a gastric ulcer. Mucosal ulcers and scars of ulcers, which are not usually demonstrable roentgenologically, may be readily seen on the photographs taken with the gastrophotor.

Glasgow Medical Journal

36: 57-112 (Feb.) 1932

*Present Methods of Treating Tumors of Urinary Bladder. A. Jacobs.—p. 57.
Observations on Retroverted Uterus. A. Sharman.—p. 69.
Observations of Retroflexion of Uterus. J. Hewitt.—p. 83.

Present Methods of Treating Tumors of Urinary Bladder.—Jacobs' study is based on fifty-six cases of bladder tumors, thirty-two of which were malignant. In twenty of the benign cases the patients were treated by cystodiathermy, in three by diathermy through the suprapubic route, and in one by excision. In seven of the malignant cases excision was used, in nine irradiation, and in eleven diathermy. Five patients did not receive any treatment. There was no operative mortality in the benign group, and the results of treatment were highly satisfactory. In the malignant group, operative mortality was lowest and the best results were obtained by partial cystectomy.

Guy's Hospital Gazette, London

46: 53-76 (Feb. 20) 1932

Gonorrheal Rheumatism. V. E. Lloyd.—p. 54.
A Visit to Transylvania: "The Land of the Seven Castles." C. F. Brockington.—p. 69.

Indian Journal of Medical Research, Calcutta

19: 705-985 (Jan.) 1932

Pentavalent Compounds of Antimony in Treatment of Kala-Azar: VI. Comparison of Results with Different Compounds. L. E. Napier.—p. 705.
Id.: VII. Neostibosan: Di-Ethyl-Amine Para-Amino-Phenyl Stibiate: Two Hundred and Fifty-Four Cases. L. E. Napier.—p. 719.
Bacteriophage in Treatment of Plague. B. P. B. Naidu and K. B. C. R. Avari.—p. 737.
Is Paragonimiasis Likely to Spread in India? A. N. Gulati.—p. 761.
Action of Narcotine on Gastro-Intestinal Tract. B. B. Dikshit.—p. 765.
Pharmacology of Salts of Fatty Acids of Chaulmoogra Oil: I. Alepol. B. B. Dikshit.—p. 775.
Studies of Genus Proteus: I. Cultural and Serologic Study of Certain Strains of Proteus Group: II. Laboratory Diagnosis of Typhus Fever. M. Yacob.—p. 787.
Basal Metabolism of Young College Students, Men and Women, in Madras. B. T. Krishnan, with assistance of C. Vareed.—p. 831.
Studies in Nutritive Value of Indian Vegetable Foodstuffs: III. Nutritive Values of Lentil, Lens Esculenta, Moench.; Cow Pea, Vigna Catjang, Walp.; and Aconite Bean, Phaseolus Aconitifolius, Jacq. S. P. Niyogi, N. Narayana and B. G. Desai.—p. 859.
Bacteriologic Examination in Leprosy: Study in Efficiency of Various Methods in Common Use. J. Lowe and E. B. Christian.—p. 867.
Edible and Paralysific Bugs, One of Which a New Species Cyclopelta Subhimalayensis n. sp. (Hemipteron, Heteropteron, Pentatomida, Dinadorina). C. Strickland.—p. 873.
Rôle of Adrenalin in Maintaining the Normal Tonus of Organs of Body. N. K. Basu.—p. 877.
Studies on Indian Simulidae: I. Simulium Hemalayense sp. n.; Simulium Gurneyae Senior-White; and Simulium Nilgiricum sp. n. I. M. Puri.—p. 883.
Id.: II. Descriptions of Males, Females and Pupae of Simulium Rufibasis Brunetti, Its Variety Fasciatum Nov. Var. and of Three New Species from Himalayas. I. M. Puri.—p. 899.
Anopheles Breeding in Relation to Season. M. O. T. Iyengar.—p. 917.
Escape of Filaria Larva from Proboscis of Culex Fatigans. S. S. Rao and M. O. T. Iyengar.—p. 941.
Malarial Pigment (Hemozoin) in Spleen. R. C. Wats and W. I. White.—p. 945.
Distribution of Protective Principle in Different Protein Fractions of Horse Serum Immunized Against Snake Venom. S. M. K. Mallick and G. C. Maitra.—p. 951.
Comparative Study of Efficiency of Cholera Vaccine Stored in "Frigidaire" at 4 C. and in Biologic Incubator at 37 C. G. C. Maitra and M. L. Ahuja.—p. 957.
Diffraction (Halometric) Method of Determining Average Diameter of Red Blood Corpuscles. S. R. Christophers and A. C. Craighead.—p. 963.
Synthesis of Vitamin B_1 and "Bios" by Bacillus Vulgatus. B. C. Guha.—p. 977.

Journal of Hygiene, London

32: 1-142 (Jan.) 1932

Bactericidins of Normal Serum: Their Characters, Occurrence in Various Animals and Susceptibility of Different Bacteria to Their Action. T. J. Mackie and M. H. Finkelstein.—p. 1.
*Some Observations on Immunity and Disability Caused by Vaccinia. S. F. Dudley and P. M. May.—p. 25.
*Effects of Injection of Normal Brain Emulsion into Rabbits, with Especial Reference to Etiology of the Paralytic Accidents of Antirabic Treatment. E. W. Hurst.—p. 33.
Relation Between Specific and Nonspecific Agglutination in Brucella Group. S. R. Pandit and G. S. Wilson.—p. 45.
*Immunization with Inactive Vaccinia Virus. J. O. W. Bland.—p. 55.
Part Played by Meteorological Conditions on Respiratory Mortality in Liverpool. Hilda M. Woods and C. O. Stallybrass.—p. 67.
Cancer and Syphilis. G. Evans.—p. 79.
Classification of Colon-Aerogenes Group of Bacteria in Relation to Their Habitat and Its Application to Sanitary Examination of Water Supplies in Tropics and in Temperate Climates. H. J. O. Burke-Gaffney.—p. 85.
Significance of Bacterium Aerogenes in Water. J. D. A. Gray.—p. 132.

Immunity and Disability Caused by Vaccinia.—Dudley and May found that in a group of boys, revaccinated twelve years after primary vaccination in infancy, 37 per cent gave "immune" reactions to vaccine virus. Immune reactions were more than twice as common in those boys with two or more old vaccination scars than in those with one. When the number of scars was held constant there was no tendency for groups with large scars to be more immune than those with small scars. The average area of a single old scar was smaller in the "immunes" than in the rest of the group. The substitution of a vaccination technic consisting of one insertion of lymph with a minimum of trauma, for two or three insertions by "cross-hatched" scarifications, was followed by nearly a threefold fall in the recorded vaccinia morbidity, and a halving of the number of days' sickness attributed to vaccinia.

Effects of Injection of Normal Brain Emulsion into Rabbits.—Hurst reports that the introduction parenterally in rabbits of emulsions of normal brain tissue is followed by severe toxic manifestations leading to wasting and death. In a few cases paralyses occur, but similar nervous symptoms have been encountered in other work not involving the use of brain emulsions; the cause of these paralyses has not been determined, and histologically no lesions in the central or peripheral nervous system have been detected. The author believes that there is insufficient evidence to warrant the view that the paralytic accidents of antirabic treatment are directly due to the foreign nervous substances injected.

Immunization with Inactive Vaccinia Virus.—Bland carried out experiments on rabbits, guinea-pigs and monkeys to test the immunity produced by vaccinia virus killed with heat, phenol or solution of formaldehyde. Before use, the vaccines were rigorously tested for their inactivity by a method of inoculation and triple passage in series. The test of immunity was quantitative. The rabbit experiments gave equivocal results but indicated that a slight immunity was produced in some cases. In guinea-pigs, more success was obtained: they could be protected against one to ten minimal infecting doses and showed a partial immunity to stronger tests. Monkeys were tried in only one experiment, in which a weak vaccine was used. This did not protect them. The superiority of guinea-pigs for this kind of work is discussed, as also the bearing of the results obtained with them on the nature of immunity to vaccinia virus.

Journal of Neurology and Psychopathology, London

12: 193-288 (Jan.) 1932

Torsion-Spasm (Dystonia Lenticularis): Case Report. H. G. Garland.—p. 193.
Significance and Value of Lange Goldsol Reaction in Disseminated Sclerosis. Helen J. Rogers.—p. 205.
Direct Stimulation of Red Nucleus in Cats. W. R. Ingram, S. W. Ranson and F. I. Hannett.—p. 219.
Hemangioma of Vertebra: Cause of Compression of Cord. F. J. Nattrass and D. Ramage.—p. 231.
Flocculation Test for Cerebrospinal Fluid. D. Prentice.—p. 238.

Journal of Tropical Medicine and Hygiene, London

35: 49-64 (Feb. 15) 1932

Serodiagnosis of Active Syphilis by Means of Serum Auto-Antigen (S. R.). O. Sciarra.—p. 49.
Nature of Rheumatic Poison. J. T. Clark.—p. 55.

Kenya & East African Medical Journal, Nairobi

8: 269-300 (Jan.) 1932

Origin and Development of Bismuth Therapy in Yaws. W. K. Connell.—p. 270.
Observation on Anophelines and Malaria in Kitale, with Notes on Experimental Control with Paris Green. C. B. Symes.—p. 280.
Child Welfare. M. M. Shaw.—p. 284.
Didelphys Uterus: Case. Margaret B. Cook.—p. 295.

Lancet, London

1: 273-326 (Feb. 6) 1932

Etiology of Carcinoma. J. J. M. Shaw.—p. 273.
*Relationship of Heart Size and Body Build to Cardiovascular Efficiency. H. A. Treadgold and H. L. Burton.—p. 277.
*Toxic Diphtheria: Combined Antitoxin and Dextrose-Insulin Therapy. E. C. Benn, E. Hughes and S. Alstead.—p. 281.
Treatment of Ménière Syndrome by Zünd-Burguet Electrophonoid Vibromassage. J. A. Keen.—p. 285.
Aortic Diastolic Thrills: Report of Case. G. Bourne.—p. 286.
Uses of Casein in Infant Feeding. J. Gibbens.—p. 288.

Relationship of Heart Size to Cardiovascular Efficiency.—Treadgold and Burton state that the apex beat of the heart as determined by palpation coincides with the anatomic apex or left border of the heart, as shown by the orthodiagram, in two thirds of the cases examined. The margin of error in clinical underestimation or overestimation rarely exceeds 1 cm., and overestimation is the more usual of the two. In a total series of 223 cases the total transverse diameter of the heart was within plus or minus 10 per cent of predicted normal, based on weight alone, in 87 per cent of the cases. Abnormally small hearts, as estimated by their transverse diameter, are present in 8 per cent, and abnormally large hearts in 5 per cent of the cases. In persons of average build, 90 per cent of hearts fall within normal limits, 6 per cent being below and 4 per cent above normality. Among those of slender build the transverse diameter of the heart is below minus 10 per cent of predicted normal in 12 per cent of the cases. Among those of thick-set build the transverse diameter of the heart is above plus 10 per cent of predicted normal in 11 per cent of the cases. Height, in addition to weight, has therefore to be taken into considera-

tion in cases of abnormal build, it being borne in mind that the transverse diameter of the heart is usually smaller than normal in those of slender build and larger in the thick-set type. All cases in which the heart is at the borderline of normal range must be considered in relation to the body build, history, mode of life, and clinical observations before they are pronounced as pathologic, and changes in the heart silhouette are of more value in such cases than measurements. The relatively high proportion of abnormally small hearts (23 per cent) among cases of cardiovascular inefficiency is in striking contrast to the relatively low proportion (4 per cent) in cases of cardiovascular efficiency. Minor degrees of raised blood pressure (140 and 90 and over) are rarely found among persons with cardiovascular inefficiency and are most frequent in those of thick-set build. Cardiovascular inefficiency is commonest in those of slender build.

Toxic Diphtheria.—Benn and his associates discuss the changes in the blood sugar curve in diphtheria, and they present a series of cases of toxic diphtheria treated as suggested by Schwentker and Noel with dextrose-insulin in addition to diphtheria antitoxin. The technic of this method of treatment is as follows: 1. Immediately on admission: (*a*) intramuscular injection of antitoxin (from 32,000 to 56,000 units); (*b*) preliminary blood sugar estimation. 2. One hour after admission: (*a*) intravenous injection of antitoxin (from 32,000 to 100,000 units); (*b*) intravenous injection of dextrose (20 Gm. of dextrose in 50 per cent solution). Administration of serum (in concentrated form and undiluted) and dextrose together with several 20 cc. syringes very slowly at 37 C. 3. Ten minutes after intravenous dextrose, second blood sugar estimation. 4. One hour after intravenous dextrose, third blood sugar estimation. 5. One and a half hours after intravenous dextrose, fourth blood sugar estimation. 6. Two hours after intravenous dextrose, fifth blood sugar estimation. 7. Intramuscular injection of a suitable dose of insulin (from 10 to 30 units) if the two hour blood sugar estimation shows a slow return to normal. Subsequent treatment consists in giving dextrose by mouth in all cases in which the cooperation of the patient can be obtained. Commonly, children receive, diluted in lemonade, from 4 to 8 ounces (125 to 250 Gm.) of dextrose by mouth daily for at least the first ten days after admission, and in some cases for three or four weeks. If the patient refuses, or is unable to tolerate dextrose by the mouth, from 40 to 100 Gm. in 50 per cent solution is given intravenously during each twenty-four hours. The authors used this form of therapy in eighty-nine consecutive cases (series A) of toxic diphtheria and for purposes of comparison they took 131 similar cases (series B) in which dextrose and insulin were not used. With regard to age groups, stated day of disease at the commencement of treatment (i. e., admission to the hospital) and severity according to Bie's classification, the two groups of cases were strictly comparable. Further, serum dosage in the two cases was approximately the same. Intravenous serum therapy was employed in all cases in the two groups with the exception of one case in series A and two cases in series B, the reason being that attempts to give serum intravenously were unsuccessful owing to the collapsed state of the patient. Several important points emerge from a tabular study of the two series of cases. The first is that the case mortality in the control group was 35.9 per cent, whereas that of the dextrose-insulin group was 22.5 per cent. Since the only essential difference between the two series was the employment in the second series of dextrose-insulin therapy in addition to an average amount of antitoxin much the same as that employed in the first series, the conclusion seems clear that the factor responsible for the striking difference in case mortality was the stabilization of the carbohydrate metabolism by the use of dextrose-insulin.

1: 327-380 (Feb. 13) 1932

*Natural History of Duodenal Ulcer. J. A. Ryle.—p. 327.
Two Cases of Lymphogranulomatosis Maligna, One with Involvement of Vertebral Periosteum. Dorothy C. Hare and Elizabeth H. Lepper, with Comments by E. P. Weber.—p. 334.
*An Inquiry into Referred Pain. H. H. Woollard, J. E. H. Roberts and E. A. Carmichael.—p. 337.
Leukopoietic Value of Sulphur. T. D. Power.—p. 338.
Treatment of Dementia Praecox with Sulfosin. W. McCartan.—p. 340.

Natural History of Duodenal Ulcer.—Ryle's policy is to advise gastrojejunostomy in cases of pyloric stenosis; in cases of long standing duodenal ulcer in which clinical history, roentgen examination and test meal proclaim gross scarring or anchorage and a tendency to slow transit of food without serious stasis, and in which there has been recurrence in spite of one or more strict courses of medical treatment; in cases presenting the syndrome of anchorage to or erosion of the pancreas, and in cases of concomitant duodenal ulcer and duodenal ileus in which again there is an obstructive factor at work obviating sound healing by mechanical unrest and increasing the likelihood of perforation by increased intraduodenal pressure. His policy is to oppose surgical treatment in early cases; in nonobstructive cases with short histories and adverse pedigrees or not previously accorded a strict medical treatment; in cases with recent hemorrhage, lacking other indications, and in cases in which roentgen examination and test meal show gastric "hurry," for here to accelerate emptying still further and to attempt an anastomosis in the presence of exaggerated motor and chemical unrest is to create just those conditions which may be held to favor secondary ulceration. Highly nervous or elderly subjects should often be deemed unsuitable for surgical treatment even when the only alternative is continuous medical and dietary care. Economic and environmental factors must at times compel a modification of general policy. Surgical treatment should always be followed by a period of strict medical treatment and proper precautions thereafter. Psychologic as well as physical requirements must be carefully studied. All physicians who undertake the treatment of this troublesome disease must endeavor to preserve the studious attitude, not lightly accepting opinion or submitting to the bias of their craft, and remembering always that they are not, in fact, concerned with duodenal ulcer the lesion but with duodenal ulcer the disease, as it occurs and as it varies in individuals of special type and temper and differing daily circumstance. In each case, briefly, judgment must be based not on the presence of an ulcer but on a proper understanding of the whole patient and the whole disease.

An Inquiry into Referred Pain.—According to Woollard and his associates, the diaphragm behaves as a viscus, since light compression of the phrenic nerve occasions no sensation referable to its anatomic site. On stimulation of the phrenic nerve, ascending impulses occur which are felt as pain and are referred. The area of referred pain is almost identical in all subjects and belongs to the fourth cervical segmental distribution. Anesthesia of the area of referred pain in no way affects the character or intensity of the referred pain, and the locality of the referred pain is not altered. Thus the pain must be due to a reference by higher centers of activity arising in the spinal segment corresponding to the nerve stimulated.

South Africa M. Assn. Journal, Cape Town

6: 33-66 (Jan. 23) 1932

Blood Groups of Bushmen. A. Pijper.—p. 35.
Bilateral Lumbar Ganglionectomy and Ramisection for Buerger's Disease. W. Welchman.—p. 38.
Recent Advances in Spinal Anesthesia. E. G. van Hoogstraten.—p. 40.
Early Diagnosis of Tuberculosis by Vernes Flocculation-Optometry Test. W. O. Fischer.—p. 44.
Modern Aspects of Surgery of Sympathetic. A. L. McGregor.—p. 47.

Journal of Oriental Medicine, South Manchuria

15: 99-148 (Dec.) 1931. Partial Index

Perspiratio Insensibilis. Yas Kuno.—p. 99.
Larynx of Chinese. M. Sayama.—p. 125.
Action of Vitamin B Preparations on Intestinal Peristalsis. R. Ito.—p. 129.
Biochemical Studies on Hydrocyanic Acid: 7. Cause of Hydrocyanic Acid Hyperglycemia. Fumio Kudo.—p. 130.
Action of Gold Preparations on Recurrens Spirochetes Persisting in Brain. Tadao Toda.—p. 132.
Lymph Nodes in Relation to Iron Metabolism. Hisao Kubo.—p. 134.
Blood Groups of Chinese. S. Mori.—p. 139.
Reticulocytes in Normal and Pathologic Conditions: I. Method of Counting Reticulocytes, and Reticulocytes in Normal Conditions. S. Yamaguchi and Y. Suzuki.—p. 140.
Distribution and Resorption of Fluids in Peritoneal Cavity. G. Irie.—p. 141.
Studies on Ultraviolet Rays of Sun in Mukden: I. Ray Intensity. M. Endo.—p. 143.
So-Called Apparent Divergence Paralysis: Case. K. Maeda.—p. 144.
Studies on Zondek-Aschheim's Pregnancy Reaction: III. Experimental Studies on Etiology and Mechanism of Pregnancy Reaction. S. Kuga.—p. 146.
Dietary Treatment in Tuberculosis of Skin. S. Kitamura.—p. 147.
Solution of Sodium Thiosulphate as Solvent for Arsphenamine. T. Iwakiri and M. Murayama.

Gynécologie et Obstétrique, Paris

25: 1-96 (Jan.) 1932

Variations in Uterine Tonus. R. Mahon.—p. 1.
*Cesarean Section with Temporary Exteriorization of Uterus. L. Devraigne and M. Mayer.—p. 15.
Consideration of Giant Fibroma of Uterus. N. Bardesco.—p. 25.
*Operative Technic and Evolution of Vesico-Adnexal Fistulas. K.-P. Lévitsky.—p. 31.
*Leukemia as Indication for Interruption of Pregnancy. J. Hofstein.—p. 45.

Cesarean Section with Temporary Exteriorization of Uterus.—Devraigne and Mayer assert that a cesarean section with temporary exteriorization of the uterus (Portes' operation) may conserve the uterus of young women in whom a simple corporeal operation would be dangerous. Portes' operation is especially recommended in case of infection. The authors report eight instances of cesarean section (0.07 per cent) performed with exteriorization of the uterus among 9,741 deliveries over a period of six years. In two of the patients only a cesarean section with exteriorization was possible; in the other six a low cesarean section was performed. The reintroduction of the uterus was made after a period of twenty to seventy-two days. In every case except one the reintroduction was made easily; only several omental adhesions were noted (one case). Live infants were obtained in six of the interventions. The author concludes that Portes' operation is legitimately indicated in rare instances of infection in which a conservative operation may menace the life of the patient and in which a multilating operation is to be avoided.

Operative Technic and Evolution of Vesico-Adnexal Fistulas.—Lévitsky states that the formation of fistulas between the urinary bladder and the adnexa can be understood when one considers the peculiarities of the female genital organs and their intimate relationship with the urinary bladder. After a discussion of several personal observations, the author concludes that (1) vesico-adnexal fistulas are more frequent than is believed; (2) in the presence of prolonged suppuration of the organs of the pelvis a complete urologic examination should be made; (3) the vesicoparametric fistulas have a great tendency to spontaneous cicatrization and in a number of cases do not require radical surgical intervention; (4) in the presence of vesico-adnexal fistulas, operative intervention is necessary; (5) ablation of the tumor is performed through the abdominal route; (6) after the operation the introduction of an indwelling catheter is obligatory.

Leukemia as Indication for Interruption of Pregnancy.—Hofstein finds that leukemia in the pregnant woman is extremely rare. He discusses twenty-eight cases from the literature (only two were French) and concludes that one can allow the pregnancy to go on to term when it occurs at the beginning of the leukemia and especially when it is the first pregnancy during a leukemia. The aggravation of the leukemia can be determined by the blood picture, the increase in the size of the spleen, and the appearance of hemophilic syndromes. When, on the contrary, the pregnancy is not the first and occurs after several years of leukemia, to protect the mother one should consider the leukemia as a vital indication for the interruption of the pregnancy and perform it during the first two months. The aggravation of the myeloid leukemia in these cases is so certain that, besides the early interruption of the pregnancy, sterilization of the patients is recommended. The roentgen rays used in sterilization constitute also a therapeutic agent against the leukemia.

Journal de Méd. et de Chirurgie Pratiques, Paris

103: 77-124 (Feb. 10) 1932

Treatment of Keloids. J. Belot.—p. 77.
Gold Salts in Treatment of Cutaneous Tuberculosis and Tuberculids. P. Fernet.—p. 87.
Lichen Planus. H. Jausion and A. Pecker.—p. 96.
*Short Waves in Dermatology. M. Saidman.—p. 103.
*Actinotherapy in Psoriasis. J. Meyer.—p. 107.

Short Waves in Dermatology.—Saidman's apparatus consists of one type of diathermy, infradiathermy according to the term accepted by d'Arsonval. The principle of the apparatus is the same as that in high frequency electrical generators and is related to the diathermic bistoury. It consists of two triode lamps of 250 watts each and takes approximately 6 amperes on 110 volts. The thermic amperemeter has a maximum intensity of 4 amperes. The length of the wave is 16 meters. Usually circular electrodes 10 cm. in diameter are used. The indications for this apparatus are the same as those for ordinary diathermy. The alleviating action, almost in the absence of heat, is obtained in the most acute algias, as facial and sciatic, and in sympathetic algia. The induced currents developed in the organism between the two arms of the condenser which constitute the electrodes have in themselves an influence on the nervous system, independent of all caloric effect. This apparatus demonstrates the effect of a high frequency current. The action of this apparatus on the peripheral nervous system is evident in the treatment of pruritus and Raynaud's syndrome; there is a eutrophic action in the treatment of cutaneous ulcers. This short wave apparatus combines the action of the bistoury and electrical coagulation.

Actinotherapy in Psoriasis.—Meyer asserts that actinotherapy is one of the best methods for the treatment of psoriasis. However, no artificial source can supplant the sun, which owes its action in part to its rays and in great part to the general improvement that comes from rest in the open air. The dosage of irradiation is regulated by the thermo-electric couple and a (Saidman) skin sensitometer. The ultraviolet rays of the arc or mercury lamp in a medium or moderate dose will clear most of the psoriatic lesions. Topical dressings include chrysarobin and mineral and vegetable tars. No therapy can guarantee absolute cure, although more or less blanching may be attained. It is impossible to prevent recurrences often coming soon after the irradiation.

Paris Médical

22: 89-104 (Jan. 30) 1932

Modern Orientation of Medical Bacteriology. V. de Lavergne.—p. 89.
A Corticosuprarenal Hormone. M. Poumailloux.—p. 94.
*Idiosyncrasy to Quinine: Treatment. E. Manoussakis.—p. 98.
*Danger in Puncture of Infected Urinary Bladder. H. Bayle and A. Bocquentin.—p. 102.

Idiosyncrasy to Quinine: Treatment.—Manoussakis asserts that the best known morbid manifestations following absorption of quinine are the scarlatiniform exanthems or a rash with or without pseudo-asthmatic or anginal phenomena. The symptoms which differentiate this crisis from true scarlet fever are the absence of an incubation period, absence of exanthem, tachycardia, high fever, and vomiting. The urticaria due to quinine is common and easy to diagnose. The rash comes and goes quickly and the disturbance is chiefly gastrointestinal or respiratory. The prognosis is good unless the crisis is accompanied by an intense inflammatory phenomenon either in the external or the internal organs, in which case it is dramatic. These grave crises follow the absorption of large doses of quinine by sensitive and weakened individuals. Another form of idiosyncrasy is hemoglobinuria. The tolerance dose of quinine varies in all sensitive individuals (from several tenths of a milligram to 1 Gm.). The dose is usually weaker for the patients who react by an urticarian crisis or scarlatinal exanthem with or without internal inflammatory phenomenon than for those who react by hemoglobinuria. The sensitivity to quinine is due to a congenital predisposition; it is sometimes familial but not hereditary. In discussing treatment, the author believes that individuals sensitive to quinine should avoid malarial countries. The appearance of these accidents is due to the presence of appreciable quantities of quinine in the circulation. To avoid these accidents, a dose of quinine should be administered when the preceding dose already absorbed has been eliminated. The author usually begins by the injection of 0.1 Gm. of quinine; and if at the end of one hour there is no reaction, this is followed by the injection of 0.25 Gm. (the dose which in most instances determines sensitivity). If the reaction is slight the injection is repeated in the evening, but if the reaction does not disappear the second injection is postponed to the following day. The second injection usually determines the degree of sensitivity. One may get slight reactions after the next two injections of 0.25 Gm. each, one at noon and one in the evening, but the following injections will be tolerated without the least subjective or objective inconvenience.

Danger in Puncture of Infected Urinary Bladder.—Bayle and Bocquentin do not believe that suprapubic evacuative punctures of the urinary bladder are altogether harmless interventions. One of the greatest dangers is the infection from the

infiltration of urine along the puncture needle or at the level of its passage when it has been removed. They report two cases of prevesical phlegmons due to infiltration of urine after puncture of the bladder. Disregarding the accidents due to injury of the peritoneum either because the puncture has not been made at the right point or because a malformation of the peritoneal culdesac exists, the author draws the following conclusions: One must, as much as possible, avoid puncturing the urinary bladder when one suspects that the urine is infected. In puncturing the bladder it is convenient to use a small caliber needle and not a trocar (the needle used for lumbar puncture is very satisfactory). It is a good idea to aspirate because it is preferable to empty the urinary bladder as completely as possible. In that way the perforation is minimal, the tension in the bladder is low and the chances for diffusion of the urine across the bladder wall will be reduced to a minimum. Since puncture of the urinary bladder is a small surgical intervention, the patient ought to rest in bed at least twenty-four hours to permit the puncture to heal more easily.

Clinica Medica Italiana, Milan

62: 1107-1196 (Dec.) 1931

Qualitative Hematology of Blood in Pulmonary Tuberculosis. L. Pontoni and M. Belli.—p. 1107.
*Ketonemia in Normal and Pathologic Conditions. G. Boattini and C. Salaris.—p. 1138.
Antipolyuric Action of Insulin and Solution of Pituitary in Diabetes Insipidus. G. Pellegrini.—p. 1165.

Ketonemia in Normal and Pathologic Conditions.—Boattini and Salaris conclude from their researches that ketone bodies are found in the blood of the healthy person as products of normal metabolism. On the basis of the Engfeldt method, the variations for acetone and diacetic acid range between 0.3 mg. and 1.5 mg. per hundred cubic centimeters, and beta-oxybutyric acid from 2.5 mg. to 4 mg. The ketonemic index is increased in diabetes mellitus, diseases of the liver, decompensated cardiac disease, and, to a less extent, in disorders of the kidney. In subjects with malignant neoplasms, ketonemia is also increased, usually in direct relation to the degree of cachexia and the hepatic insufficiency. The ketonemic index is not changed in compensated cardiac disorders. However, no diagnostic importance can be ascribed to the ketonemic index, since there are multiple factors that may influence it. The tests of the three fundamental diets (fats, proteins, carbohydrates) support the view that the fats have the highest ketogenic potency.

Pediatria, Naples

40: 57-111 (Jan. 15) 1932

Blood Tests on Children with Typhoid, Treated with Di Cristina-Caronia Vaccine. C. Magi.—p. 57.
Action of Pettit's Antipoliomyelitic Serum. A. Foa.—p. 76.
*Antidiphtheritic Vaccination with Ramon's Toxoid. Anna Pinelli.—p. 84.

Antidiphtheritic Vaccination with Ramon's Toxoid.—Pinelli concludes from her researches that Ramon's toxoid is capable of producing sufficient diphtheria antitoxin to effect immunization. The immunity conferred by the vaccination appears early—nearly always after the second injection, though rarely after the first. The Schick reaction becomes negative ten days after the first injection in 20 per cent of the persons vaccinated, fifteen days after the second injection in 85 per cent of the vaccinated, or, more precisely, in 69 per cent of the infants, in 84 per cent of the children aged 1 to 4, and in 78 per cent of the children aged 4 to 8. The vaccinated persons who remain receptive after the second injection present a much attenuated receptivity. After the third injection, the Schick reaction after a month becomes negative in 100 per cent of the persons vaccinated. It is necessary to observe the interval of three weeks between the first two injections and of fifteen days between the second and third injections. The reactions observed following vaccination by the subcutaneous route are nearly always confined to the point of inoculation, and are of slight nature and short duration. The general reactions are rare (slight fever that may reach 38 to 38.5 C., or 100.4 to 102.3 F.), and are always accompanied by local reactions. From the standpoint of frequency and intensity, the reactions are less frequent and intense, the younger the child. In an endemic environment and also during an epidemic, toxoid vaccination by the subcutaneous route constitutes a means of simple prophylaxis, being easy of application and absolutely harmless. In the case of vaccination in an infected environment, one may observe cases of diphtheria with a benign course after the first and even after the second injection. Of course vaccination should not be given in febrile diseases, during convalescence from acute diseases, or in renal diseases. Toxoid vaccination by the nasal route, although, on account of its simplicity and its constant harmlessness, constituting a valuable method in dealing with children, since it is bloodless and hence more acceptable to young children, is not, however, the form best adapted for combating diphtheria effectively. Whereas the percentage of immunization with subcutaneous vaccination, if the technic is precise and constant, amounts to 100 per cent of those vaccinated, with nasal vaccination the percentage drops to 68.

Revista Médica de Barcelona

17: 1-96 (Jan.) 1932

Intersexuality. G. Marañón.—p. 3.
Pseudohermaphrodism: Case. J. Mas Collellmir.—p. 12.
*Hepatosplenography by Means of a Thorium Dioxide Preparation. A. Pedro Pons and J. M. Vilaseca Sabater.—p. 16.
*Histologic Study of Distribution of a Thorium Dioxide Preparation in Various Tissues. A. Amell Sans.—p. 35.
Clinical Method for Correlating Eosinophilia with Lymphocytes and Monocytes of Blood. F. Mas y Magro.—p. 48.

Hepatosplenography by Means of a Thorium Dioxide Preparation.—Pedro Pons and Vilaseca Sabater assert that thorium in colloidal state because of its affinity for the cells of the reticulo-endothelial system has been recently utilized in roentgenography of the spleen and liver. They use a thorium dioxide preparation. The solution has a large phase of dispersion and does not flocculate with organic fluids. Rabbits and dogs were used in the experiments. In man the first dose is from 0.1 to 0.15 Gm. of the preparation per kilogram of body weight (6 to 9 Gm. or 25 to 37 cc. for a man weighing 60 Kg. or 132 pounds); the dose can be increased, according to tolerance, to 0.3 and 0.4 Gm. (injections every twenty-four hours) until all of from 60 to 80 cc. has been injected at the end of three days. If the substance is not well tolerated, the injections after the first one should be made every other day until the whole amount has been injected. The solutions should be previously warmed to body temperature and should be injected intravenously, slowly within a minimum time of five minutes. It may be convenient to administer absorbent powders during the days of injection and a cleansing enema before roentgenography (forty-eight hours or better, three or five days after the last injection). Without other special maneuvers this method gives distinct and well contrasted roentgenograms of the liver and the spleen. After a discussion of the literature and the results from fourteen of their own observations, the authors conclude that this method can be valuable in demonstrating the contour, volume and general form of the viscera, as well as pathologic conditions such as cysts, abscesses and neoplasms and diffuse tumoral invasions and advanced cirrhotic hepatitis and leukemias. The solution is not immediately toxic for the healthy individual, but later accidents cannot be precluded. Cirrhosis in an advanced state, active leukemias and hemorrhagiparous states are contraindications.

Distribution of a Thorium Dioxide Preparation in Various Tissues.—Amell Sans utilized the material used in the studies made by Pedro Pons and Vilaseca Sabater. They made microscopic studies of the distribution of thorium in the more important organs of the rabbits used in the experiments and also in most of the important viscera taken from human necropsies. The material was taken from the apparently healthy rabbits killed during the course of the experiments, from two cases of human hepatic cirrhosis, one case of chronic pulmonary tuberculosis and a case of primary neoplasm of the spleen characterized by reticulocytoma with metastases in the mesenteric, splenic, and pancreatic lymph nodes and small hepatic metastases. The author concludes that his studies prove that the thorium dioxide preparation is taken up primarily by the splenohepatic reticulo-endothelial system, preferably by the spleen, and when this system is overloaded it is taken up by the histiocytes of other organs more or less related to the endothelial system in the following order: lungs, suprarenals, ovary, heart, thyroid and hypophysis. The thorium is eliminated

almost completely through the biliary routes (the renal elimination is negative). After the first phase of storage of thorium, which is equivalent to a partial blockade of the active reticulo-endothelial system (colloidopexy), the thorium begins to be eliminated by the parenchymatous hepatic cells of the biliary tract. This elimination is remarkably slow, probably because of the molecular size and weight of the substance. The dose of the colloid solution of thorium used for hepatosplenography has hardly any toxic action. However, because and by reason of the blockade of the reticulo-endothelial system and its slow elimination it can be harmful to patients in whom the splenohepatic antitoxic functions which depend on this system are weakened through a disease, serious in itself, such as cirrhosis. This contraindication may be great and may include diffuse parenchymatous degenerations of the liver.

Archiv für Gynäkologie, Berlin

148: 1-350 (Jan. 21) 1932

Influence of Castration on Functional Condition of Thyroid in Female Albino Rats. O. Bokelmann and W. Scheringer.—p. 1.
Results of Treatment and Permanent Cures in Carcinoma of Cervix Uteri. H. Kamniker.—p. 12.
*Roentgen Diagnosis of Intra-Uterine Death of Fetus. G. Danelius and K. Heyrowsky.—p. 31.
Eclampsia and Vascular System. E. Klaften.—p. 43.
Modification of Function of Anterior Lobe of Hypophysis by Hormonal Substances and Their Practical Significance. L. Kraul.—p. 65.
Active Substances of the Corpus Luteum. E. Engelhart.—p. 76.
*Sugar Metabolism in Puerperas. N. Alders and K. Stern.—p. 81.
*Significance of External Pelvimetry for Diagnosis of Narrow Pelvis: Diagnostic Significance of So-Called Conjugata Lateralis. J. Shordania.—p. 89.
Respiration and Fermentation of Surviving Human Placenta and Its Modification by Hormones: Lactic Acid Metabolism of Living Placenta of Pregnant Animals. A. Loeser.—p. 118.
Biologic, Serologic and Pharmacologic Investigations on Spermatozoa of Guinea-Pigs and of Man. J. Granzow.—p. 149.
Clinical and Experimental Investigations on Hormones of Anterior Lobe of Hypophysis. K. Ehrhardt.—p. 235.
Clinical and Animal Experiments on Melanophore Component of Posterior Lobe of Hypophysis. K. Ehrhardt.—p. 265.
Clinical Aspects and Pathology of Primary Carcinoma of Uterine Tubes. A. Krekeler.—p. 271.
"Schollen" Cells, Estrus and Menstruation. O. O. Fellner.—p. 287.

Roentgen Diagnosis of Intra-Uterine Death of Fetus.—Danelius and Heyrowsky first summarize the roentgenologic characteristics of intra-uterine death of the fetus that have been described by others, especially by Spalding and Kehrer, and then they describe their own observations in three cases. In all three of them the diagnosis intra-uterine death of the fetus was possible on the basis of the clinical symptoms, but in the case of an adipose gravida roentgenoscopy proved a valuable aid in the diagnosis. The Spalding-Horner symptom, that is, the superposition of the cranial bones in the manner of roofing tile, was observable in all three cases. In one instance the deformity was especially severe, and it could be observed in the course of the uterine contractions. The authors are convinced that this is the first case in which the gradual development of the symptom from a normally shaped cranial vault to the severest deformity could be observed in all its phases. The flattening of the cranial vault, which has been described by other investigators as indicative of intra-uterine death of the fetus, was observed in one of the three cases. The occipital prolongation of the head as described by Kehrer was not observed by the authors. The sharp angular bending of the fetal spinal column against the cranium was observed in one case, but it is pointed out that this symptom is not reliable, since it was also observed in a case in which a viable child was born. In regard to abnormal curvatures or to the stretching of the spinal column, it is emphasized that great care is necessary in their evaluation. The position of the extremities is likewise not a reliable indicator for intra-uterine death. Abnormal calcium deficiency could not be observed probably because the time between the death of the fetus and the roentgenoscopy was too short. The authors think that following the cessation of the fetal circulation the brain loses its turgor, the intracranial pressure decreases and the pressure of the uterus becomes predominant. This difference in pressure causes the deformity of the fetal head, and the increased pressure during uterine contractions makes the deformity more pronounced. However, a definite demarcation between a physiologic configuration of the fetal head and the Spalding-Horner symptom is not possible. In border cases it is therefore essential that the roentgenogram be evaluated only with due consideration of the clinical symptoms.

Sugar Metabolism in Puerperas.—Alders and Stern state that the normal puerpera eliminates in the daily urine, on the average, 1.5 Gm. of sugar, of which about four fifths is lactose (physiologic lactosuria) and the remainder can be considered the normal physiologic glycosuria. Following the tolerance test with 200 Gm. of dextrose, the elimination of sugar increases approximately 0.5 Gm., which is eliminated in the form of lactose. These results were obtained with a special method. After the other reducing substances have been removed from the urine, small amounts of dextrose and of lactose can be determined side by side, by means of the reagent of Patéin Dufau. In regard to the sugar content of the milk of the puerpera, the authors state that a single administration of a larger amount of dextrose or of galactose does not change its sugar content.

External Pelvimetry for Diagnosis of Narrow Pelvis.—Shordania based his investigations on external pelvimetry on the following premises: 1. A normal delivery is largely dependent on the so-called conjugata vera; that is, the distance between the farthest projecting point of the promontory and the internal surface of the symphysis. 2. In external pelvimetry, that diameter is of greatest value for the diagnosis of narrow pelvis which has the most constant relation to the conjugata vera. Accordingly the author studied the diagnostic value of the various external pelvic measurements by comparing them with the conjugata vera. He paid particular attention to the diagnostic reliability of the so-called conjugata lateralis; namely, the distance between the spina iliaca anterior superior and the spina iliac posterior superior of the same side. Koerner, who was the one to emphasize the diagnostic significance of the conjugata lateralis, maintained that normal delivery was possible whenever the conjugata lateralis was more than 13 cm. (normal, 14.5 cm.), but a conjugata lateralis of less than 12.5 cm. made normal delivery impossible. The author's observations were made on the pelves of ninety-three skeletons, also on 250 pregnant women during the first weeks of pregnancy and finally on women with various types of narrow pelvis during delivery. He reaches the conclusion that of the various pelvic diameters the external conjugate diameter is the most reliable in the diagnosis of narrow pelvis. The conjugata lateralis he found to be entirely unreliable, for in several instances of actual narrow pelvis the conjugata lateralis indicated a normal or even a wide pelvis.

Deutsche medizinische Wochenschrift, Leipzig

58: 203-240 (Feb. 5) 1932. Partial Index

Climatotherapy and Heliotherapy in Surgical Tuberculosis. O. Bernhard.—p. 203.
*Kidney and Increase in Blood Pressure. M. Rosenberg.—p. 206.
Experiences with Fractional Oral Cholecystography with Especial Consideration of Behavior of Liver. Nissen.—p. 208.
Treatment of Ulcerous Cystitis by Means of Sedimenting Mixtures. B. Scholz.—p. 214.
Mode of Scarification in Smallpox Vaccination. M. Cohn.—p. 215.
Roentgen Control After Removal of Foreign Bodies from Alimentary Passages. H. A. Woelk.—p. 216.
Hormonal Action of Placenta. E. Philipp.—p. 217.
Suicide in Hamburg During Last Fifty Years. R. D. Loewenberg.—p. 219.

Kidney and Increase in Blood Pressure.—In the introduction to his paper, Rosenberg refers to a report that he made eight years ago, in which he described eleven cases of extensive destruction of both kidneys by cystic degeneration, pyelonephritis or tuberculosis with marked azotemia, in which hypertension and hypertrophy of the heart were either absent or could be traced to other disorders. He made this report realizing that many clinicians were of a different opinion, but his observations since then, which he made on twenty-two patients, corroborated his earlier report. He discusses these twenty-two cases and in the concluding summary he states that ascending infection (pyelonephritis), chronic urinary stasis (hydronephrosis or pyonephrosis), tuberculosis or cystic degeneration, which cause severe contraction and destruction of the kidney and finally lead to fatal azotemic uremia, lead to hypertension and to hypertrophy of the heart much less frequently than contracted kidney as a result of chronic nephritis and of primary vascular disease (malignant nephrosclerosis). This fact is of diagnostic significance. It has theoretical interest

in that it makes a mechanical origin of increased blood pressure, as a result of insufficient renal blood supply, improbable. Moreover, if it is assumed that hypertension is the result of chemical substances, there must be a quantitative but probably also a qualitative difference in the formation of such pressor substances in the two types of renal insufficiency.

Jahrbuch für Kinderheilkunde, Berlin

134: 255-378 (Feb.) 1932

*Sugar in Treatment of Acute Diarrhea of Nurslings. E. Schiff.—p. 255.
Influence of Raw and Autoclaved Milk on Growth and Metabolism. W. Catel.—p. 278.
Clinical and Experimental Investigations on Changes in White Blood Picture of the New-Born. W. Bayer.—p. 304.
Basal Metabolism in Obesity During Childhood. M. de Bruin.—p. 330.
So-Called "Cremaster Respiration" in Children. H. Seckel.—p. 339.
Chronic Appendicitis and Congenital Syphilis in Children. V. Mikulowski.—p. 345.
Oxygen Saturation of Blood in Peptone Shock. E. Schiff and A. Mazzeo.—p. 362.

Sugar in Treatment of Acute Diarrhea of Nurslings.—Schiff shows that it is wrong to try to counteract diarrhea of alimentary origin by a reduction in the carbohydrate intake and the administration of large amounts of protein. The main object of the therapy should be to counteract the acute dehydration of the organism. In experiments he was able to prove that exsiccosis is due to a disproportion between protein and the water content of the food and that it can be counteracted by excluding protein from the diet until all symptoms have disappeared. Because in exsiccosis there is also a glycogen deficiency in the liver, and because carbohydrates are of greatest significance for the growing organism, the author considered the administration of carbohydrates advisable. He found a nutritional solution of the following composition as most suitable: one third volume of Ringer's solution or whey and two thirds volume of a 10 per cent rice gruel. To this is added from 6 to 8 per cent of dextrose (computed for the total volume). Instead of the usual tea and gruel diet with gluside, a nursling with diarrhea is given this nutritional solution. The daily quantity is about one sixth of the body weight but, as a rule, not in excess of 800 Gm. It is of greatest significance for the therapeutic success not to give milk too early but to introduce it gradually. Up to this point the nutritional therapy of a severe diarrhea is the same as in toxicosis, except that in toxicosis the circulatory shock has to be counteracted. For this is recommended the intravenous infusion of Ringer's solution, to which a 10 per cent solution of dextrose has been added. For the mobilization of the blood depot, subcutaneous injection of epinephrine is recommended. After giving detailed reports of a number of cases, the author mentions the most characteristic aspects of the therapeutic action of his method.

Klinische Wochenschrift, Berlin

11: 225-264 (Feb. 6) 1932

Radiation of Pressoreceptor Circulatory Reflexes. E. Koch.—p. 225.
Acetic Aldehyde as a Circulatory Remedy. P. György.—p. 227.
Behavior of Pulmonary Circulation in Various Diseases. M. Hochrein and C. J. Keller.—p. 231.
Relations Between Anterior Lobe of Hypophysis and Generative Glands. W. Hohlweg and M. Dohrn.—p. 233.
Experimental Therapy of Tumors: Influence of Complex Lead Preparation on Transplantable Carcinoma of Rabbits. W. A. Collier.—p. 235.
*Pathogenesis of Funicular Myelitis. F. Salus.—p. 237.
*Hypersusceptibility to Methyl-Amino-Cresol Sulphate (Metol): Photographers' Dermatitis. A. Perutz.—p. 240.
Little Considered Inhibition Manifestation in Isohemagglutination. F. J. Holzer.—p. 243.
New Apparatus for Intravenous Continuous Drop Infusion. R. Boller.—p. 245.
Examination and Estimation of Ferment Preparations. C. A. Rojahn and J. A. Müller.—p. 246.
Processes in Circulation During Shock. G. Ganter and A. Schretzenmayr.—p. 246.
Clinical Evaluation of Complement Fixation Reaction in Alcoholic Cancer Extracts. M. Eisler and I. Jacobsohn.—p. 247.
Disturbances in Oxygen Diffusion Through Capillary Walls and Their Modifiability by Strophanthin. A. Rühl.—p. 247.
Symmetrical Arthropathies in Addison's Disease. H. Curschmann.—p. 249.

Pathogenesis of Funicular Myelitis.—Salus reports three cases in which after gastro-enterostomy or after resection of the stomach the gastric acidity decreased, and after a number of years funicular myelitis developed without any signs of anemia. He cites reports from the literature that assume a toxic origin of funicular myelitis, and since in achylia the duodenum generally contains large numbers of colon bacilli and of streptococci, it is assumed that the toxins of these cause the funicular myelitis. In the cases observed by the author, the cerebrospinal fluid contained bactericidal substances against hemolytic strains of the colon bacillus which he considers as indicative of changes in the meningeal permeability conditions. Since the concurrence of funicular myelitis with diseases of the digestive tract indicates a causal relationship between the two, the author advises that in neurologic disorders such as funicular myelitis the gastric juice should always be examined chemically to discover an eventual achylia. He also advises the examination of the duodenal flora, testing of the blood for the presence of bactericidal antibodies, against hemolytic colon bacilli, and tests to determine an abnormal permeability of the blood-cerebrospinal fluid barrier for bactericidal antibodies.

Photographers' Dermatitis.—His own studies and a review of the literature on allergic occupational dermatoses, especially on photographers' dermatitis, convinced Perutz that the latter, which is caused by metol (methyl-amino-cresol-sulphate), is a secondary protein allergy. He found that metol as such does not have antigen character, but under the influence of the ferment dehydrase it changes into a quinone body. This change of metol into quinone and the combination of the latter with the cell protein produces a quinone protein compound that in persons with hypersusceptibility acts as an allergen. If the ferment action is excluded by local anesthesia, metol does not cause an inflammatory reaction, even in persons with hypersusceptibility.

Münchener medizinische Wochenschrift, Munich

79: 253-292 (Feb. 12) 1932

Inflammation. M. Borst.—p. 253.
Plethora Abdominalis. F. Crämer.—p. 256.
Evolutional Significance of Reaction of Degeneration. W. Rückert.—p. 260.
Metabolic Changes Produced by External Influences. G. Mosberg.—p. 261.
*Treatment of Bronchitis by Means of Ether According to Bier. H. Strehl.—p. 263.
Metabolic Disturbances Caused by Liver Therapy. H. Deicher.—p. 265.
New Electrical Ophthalmoscope. R. Korbsch.—p. 267.
Treatment of Silicosis. L. Veilchenblau.—p. 269.

Treatment of Bronchitis by Means of Ether.—Strehl relates his experiences with Bier's ether treatment in 150 cases of bronchitis. It proved particularly helpful in cases of acute and of chronic bronchitis but failed in congestion bronchitis, in bronchopneumonia and in influenza. On the basis of the favorable results that were obtained in acute and in chronic bronchitis, and in view of the simplicity of the treatment, the author recommends it for similar cases. The injection is made intramuscularly into the thigh or into the buttock, by carefully avoiding nerves and blood vessels. The ampule used contains 0.5 cc. of ether, 0.5 cc. of olive oil and an addition of a 1 per cent solution of a synthetic cocaine tartrate. If possible the injection should be made in the evening and should be repeated on the following evening. In the majority of cases two injections are sufficient, but if more are necessary they can be repeated on the fourth and the fifth day. The omission of the injection on the third day prevents the dryness in the throat that otherwise is likely to develop. Beside the ether injections and rest in bed, other treatments are not necessary.

Wiener klinische Wochenschrift, Vienna

45: 225-256 (Feb. 19) 1932

Clinical Aspects and Therapy of Hyperthyreosis. N. Jagić.—p. 225.
Icterus as Secondary Disease. L. Hess.—p. 231.
*Treatment of Acute Perichondritis of Laryngeal Cartilage. O. Mayer.—p. 233.
Cataleptic Symptoms in Child Aged 3½ Years. J. Surányi.—p. 234.
Tumors of Kidney. V. Blum.—p. 235.
Exchange of Inorganic Substances Between Cells and Their Environment. H. Reichel.—p. 238.
Simulation of Lumbago. S. Erben.—p. 242.
Means to Combat Perspiratory Anomalies and Diseases of Perspiratory Apparatus. K. Ullman.—p. 243.

Treatment of Acute Perichondritis of Laryngeal Cartilage.—By Mayer's investigations it was demonstrated that the so-called laryngeal perichondritis in adults is really an osteomyelitis. The disease focus is located in the marrow of the spongiosa. In the cricoid cartilage, the functionally most

important cartilage, the disease focus is at first in the lamina and from there it spreads to the arch. The cartilage is not always evenly ossified throughout, but there is either a superficial spongiosa layer which surrounds the cartilage like a mantle, or the internal portion consists of spongiosa and the peripheral portions of cartilage. These anatomic observations give new pointers for the operative treatment. The disease foci in the marrow should be opened widely and drained. Sequestration should be awaited and necrotic portions of bones and cartilages should be extracted. Extensive resection of cartilage and of bone is unnecessary and should be avoided.

Zeitschrift f. d. ges. Neurol. u. Psychiatrie, Berlin

138: 339-656 (Feb. 2) 1932

*Multiple Neurofibromas (Recklinghausen's Disease): Case with Five Different Types of Tumors. O. Foerster and O. Gagel.—p. 339.
Reaction of Motor Chronaxia to Baths. A. Bornstein.—p. 361.
*Psychic Disturbances Following Carbon Monoxide Intoxication. F. Laubenthal.—p. 365.
"Progressive Stiffening" in Chronic Chorea (Huntington's Disease). R. Rotter.—p. 376.
Clinical Aspects, Histopathology and Hereditary Character of von Hippel-Lindau's Disease (Angiomatosis of Central Nervous System with Angiomatosis of Retina). H. Kufs.—p. 414.
Aspects of Adhesive Circumscribed Arachnitis in Late Rachitic Deformation of Vertebral Column. R. Grün.—p. 428.
Unexpected Curative Effects Following Filling of Brain with Air. A. Friedmann.—p. 440.
Relation Between Urea in Blood and in Cerebrospinal Fluid in Patients with Mental Diseases. M. Cahane and A. Henrich.—p. 446.
Pseudosclerosis with Acute Fatal "Outburst." A. von Braunmühl.—p. 453.
Changes in Hippocampus in Familial Amaurotic Idiocy. H.-J. Scherer.—p. 481.
Economical Method for Recovery of Gold from Used Gold Solutions. O. Einstein.—p. 493.
Acute Multiple Sclerosis. A. Reuter and R. Gaupp, Jr.—p. 495.
Studies on Pallidal and Corticopontile Tegmental Bundles in Case of Porencephalus. U. Poppi and I. Imber.—p. 503.
Rorschach's Form Interpretation (Perception) Test as Diagnostic Aid. F. Dubitscher.—p. 515.
Proteases of Cerebrospinal Fluid. W. Heyde.—p. 536.
Pathology and Clinical Aspects of Diffuse Medullary Diseases. G. Bodechtel and E. Guttmann.—p. 544.
Conditions of Depression. K. Schneider.—p. 584.
Course of Taenia Semicircularis. G. Jelgersma.—p. 590.
Criticism and Foundations of Psychotherapy. Charlot Strasser.—p. 594.
Report on Fifty-Seven Unrecognized Cerebral Tumors and Symptomatology of Cerebral Tumors During Senility. B. Badt.—p. 610.

Neurofibromas: Case with Five Different Types of Tumors.—Foerster and Gagel describe the clinical history of a woman, aged 21, who since childhood had had numerous neurofibromas that were disseminated over the entire body, and many of which had been removed by operation. In recent years the hearing capacity had become progressively impaired, and the right oculomotor nerve and the left facial nerve were paretic. A surgical intervention revealed tumor masses in the sinus transversus. There was a profuse hemorrhage and the patient died shortly after the operation. The postmortem examination of the brain revealed five different types of tumors. Most noteworthy were the neurinomas of both acoustic nerves and the neurinoma of the left oculomotor nerve. In addition to these, a neurinoma was detected on the first cervical root. Whether there were neurinomas on any of the other spinal roots could not be determined, since examination of the spinal cord was refused. The tumor of the medulla oblongata was found to belong to the group of the so-called central neurinomas. The third type of tumor structures were masses of glia elements, which were disseminated over almost the entire brain. In addition to these three groups, which the author considers as of ectodermal origin, there was a fourth group, namely, disseminated angiomatous neoplasms, and the fifth type were the numerous meningiomas. All the different types have been found in other cases of multiple neurofibromas (Recklinghausen's disease); however, the unusual aspect of this case is the concurrence of all of them in one individual. Thus this case history represents an addition to the knowledge about the blastomatous polymorphism of Recklinghausen's disease.

Psychic Disturbances Following Carbon Monoxide Intoxication.—Laubenthal relates the clinical history of a patient of comparatively high intellectuality, who always showed certain psychopathic characteristics, especially a tendency to bragging and swaggering. After an injury of the frontal part of the brain, the patient's behavior changed; he showed a tendency to short-circuit-like aggressions with a general increase in nervous irritability. A year later the patient was in a mine catastrophe and suffered a severe carbon monoxide intoxication. This was followed by mental derangement which lasted several weeks. At times there were strong motor reactions, and again the patient was apathic. After that an impairment of the recollection and the recognition capacities was noted and the sleep was disturbed. The patient's general psychic character showed the essential aspects of hyperphrenia. The disturbances in the sleep regulation indicate a disease condition in the region of the brain stem, and it is known that in carbon monoxide intoxications the brain stem is often impaired. The reported case is noteworthy because it shows intensification and alteration of already existing pathologic qualities by cerebral injuries, and thus throws light on the problem of the dependence of the formation of mental defects on the primary constitution of the injured organism. The case is of interest also for the problem of cerebral localization, and for the pathology of disturbances in the memory, for it was observed that recollection was largely dependent on the direction of the interest and on the intrapsychic connections.

Vrachebnaya Gazeta, Leningrad

Dec. 31, 1931, number 23-24, pp. 1721-1842

Medicine in the Service of Worker and Farmer. I. I. Lomkin.—p. 1721.
Problems in Psychoneurology in Reconstruction Period. V. N. Myasischev.—p. 1725.
Learning or Intuition? O. V. Kondratovich.—p. 1732.
*Histamine in Study of Blood Circulation Time. A. L. Myasnikov and A. G. Tetelbaum.—p. 1744.
*Viscosity of Blood in Various Forms of Tuberculosis in Children. F. Yu. Lifshitz.—p. 1751.
Multiple Primary Tumors. R. V. Goryainova and M. L. Shabad.—p. 1756.
Thallium Acetate in Treatment of Trichophytosis. V. G. Bronstein.—p. 1760.
*Effect of Quinine During Pregnancy. V. S. Tabolov.—p. 1763.
Clinical Aspect of Visceral Syphilis. I. S. Bogoslovskiy.—p. 1767.

Histamine in Study of Blood Circulation Time.—Myasnikov and Tetelbaum found that when histamine was injected in the vein of the arm a complete circuit of the blood has taken place when the face becomes reddened. They preferred to use small doses, 0.01 cc. (1:10,000 solution) of histamine per kilogram of body weight. Patients with cardiac disturbances were compared with normal individuals. The pulse rate and the blood pressure, the age and the height were other items in the study. In sixty normal individuals between the ages of 16 and 54, the average time for a complete circulation was found to be twenty-two seconds. This figure was higher as the height and age increased. Histamine increased the pulse rate by an average of ten beats a minute and decreased the blood pressure by an average of 10 mm. of mercury. Fifty cases of various cardiac disturbance gave periods for a complete circulation as follows: compensated cardiovascular disturbance, average 22½ seconds; uncompensated cardiovascular disturbance, average 35 seconds; myocardial disturbance (especially cardiosclerosis and chronic myocarditis) without clinical manifestations, average 27 seconds. Myocardial disturbance with clinical symptoms had figures similar to uncompensated cardiovascular disturbance. In arteriosclerosis the range was from 27 to 35 seconds; in syphilitic aortitis the average was 25 seconds; in hypertonia with slight myocardial insufficiency (six instances) the average was 28 seconds (the figures were normal in essential hypertonia without myocardial disturbance). In exophthalmic goiter (five instances) the time for a complete circuit averaged 17 seconds (this was increased after treatment); in three cases of myxedema the periods were 34, 33 and 29 seconds; in twelve cases of anemia the average was 17 seconds, while in two cases of polycythemia the time was 36.25 seconds. The authors believe the histamine method should prove valuable in the study of blood circulation and especially cardiac function.

Viscosity of Blood in Tuberculosis in Children.—Lifshitz made 196 determinations of the viscosity of the blood of sixty-six tuberculous children, aged from less than 1 to 11 years. He draws the following conclusions: Viscosity of the blood appears to be due to pathologic processes in the organism and may be placed side by side with other humoral symptoms in the clinical study of tuberculosis in children. In all forms of tuberculosis with exudation and in tuberculous meningitis there is an increase in the viscosity of the blood; however, in

abortive forms the viscosity is close to normal. In some instances of grave forms of miliary tuberculosis, especially in acute cachexia, the viscosity may be decreased. Increased viscosity of the blood in tuberculous children is not parallel to increase in hemoglobin or erythrocytes—the latter is additional. Hesse's coefficient (percentage of hemoglobin divided by viscosity) is lowered in all forms of tuberculosis with the exception of compensated (abortive) forms. Grave forms of tuberculosis do not cause hypo-asphyxia as often in children as is reported in adults.

Effect of Quinine During Pregnancy.—Tabolov studied 100 pregnancies complicated with malaria, which was treated by administration of quinine internally or subcutaneously. Accidents took place in only two instances. In one case the menses appeared whenever quinine was administered; in the other case the menses appeared the tenth day of the malarial infection when the temperature increased to 40 C. (104 F.) before the administration of any quinine. Abortion that took place only in the latter case could not be attributed to quinine but rather to the high temperature and the malarial infection. The author's studies do not contraindicate the treatment with quinine in malaria of the gravida. The important factor is the malarial infection which places in jeopardy not only the mother but the infant.

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

76: 941-1064 (Feb. 27) 1932

*Cholesterol Problem. A. A. Hijmans van den Bergh.—p. 956.
Fat Metabolism in Xanthoma Patients. G. H. W. Jordans and N. van der Horst.—p. 967.

Cholesterol Problem.—Hijmans van den Bergh reviews the present knowledge of cholesteremia while presenting the clinical study of a patient suffering from multiple xanthomas of the skin brought on by diabetes. He points to the fact that diabetes with xanthomas, in which there is always a notable lipemia or lipoidemia, is regularly of average intensity only, while the lipoidemia of diabetes without xanthomas nearly always accompanies very serious diabetes symptoms. For this reason the author propounds the theory that lipoidemia, which causes the multiple xanthomas appearing in diabetes, is not the effect but the real cause of diabetes. In other words, lipoidemia is the primary disease; the lipoids, which the organism tries to throw off, settle in the skin and elsewhere, and when they succeed in infiltrating the islands of Langerhans they become the causative factor of diabetes. This theory puts the multiple xanthomas of diabetes on a par with other pathologic conditions due to faulty metabolism, such as Gaucher's disease, Niemann-Pick's disease and hematochromatosis.

Hospitalstidende, Copenhagen

75: 1-184 (Jan. 6) 1932

Generalized Osteitis Fibrosa Improved After Removal of Parathyroidal Tumor: Case. O. Chievitz and H. C. Olsen.—p. 1.
Tardy Results of Acute Cerebrospinal Meningitis: Two Cases. V. Christiansen.—p. 26.
*Cancer of Stomach. M. Fenger.—p. 36.
At What Age Does Pulmonary Tuberculosis Appear in Women? O. Helms.—p. 44.
Neuralgias and Physical Treatment. H. Jansen.—p. 51.
Cultivation of Lymphoscarcoma in Vitro. C. Krebs and B. Faber. —p. 65.
Attempts at Heterotransplantation of Mouse Lymphosarcomas. C. Krebs and M. Thrane.—p. 69.
Epidermophytosis of Feet with Hematogenic Spread of Epidermophytids on Hands, Arms and Legs: Two Cases. S. Lomholt.—p. 75.
Significance of Phenomenon of "Lactic Acid-Free Muscular Contractions" for Conception of Chemistry of Muscular Contractions. E. Lundsgaard.—p. 84.
*Spasms in Childhood, with Especial Regard to True Epilepsy. S. Monrad.—p. 96.
Causes of Bromide Retention. K. O. Møller.—p. 106.
Composition of Alveolar Air. E. Nielsen and C. Sonne.—p. 119.
Treatment with Suspension of Sulphur in Oil (I-II). K. Schroeder. —p. 137.
Inheritance of A and A_2 in Large Family. O. Thomsen.—p. 155.
Cancer of Throat Complicated with Perichondritis and Stenosis: Case. A. Thornval.—p. 160.
Medicolegal Position of "Cured" Dementia Paralytica Patient: II. A. Wimmer.—p. 164.
*Hemoptysis as Initial Symptom in Mitral Stenosis. E. Warburg. —p. 175.

Cancer of Stomach.—Fenger urges the practitioner to perform immediate roentgen examination in all cases of suspected cancer of the stomach and if there is a delay (1) not to lose sight of the case and (2) to continue medicamental-dietetic treatment only a few weeks. If the symptoms still persist, roentgen examination must be made; the author recognizes only one obstacle, the patient's refusal, which is not always to be overcome. All other considerations must give way if early diagnosis of the cancer is to be attained and treatment in the operable stage made possible.

Spasms in Childhood, with Especial Regard to Epilepsy.—Monrad discusses true epilepsy in children on the basis of 100 personally treated cases, 64 in boys, 36 in girls. There was familial disposition in 28, of whom 14 recovered and 7 were improved. Fifty per cent of the cases began in the first three years of life, 25 per cent in the first year. There was grand mal in 63, petit mal in 15, and both forms in 22. He says that mental dulness appears only in the more advanced stages. Petit mal is pathognomonic for true epilepsy. With grand mal alone, diagnosis may be difficult, and the careful observation and examination necessary are as a rule best carried out in hospitals with trained neurologists and pediatricians. Early diagnosis and treatment of epilepsy are of great importance, as the poor prognosis is due to secondary changes in the brain caused by the attacks of spasms. Of his patients, 50 (42 observed for from five to ten years) have apparently recovered; 13 are under treatment, 21 unimproved and 6 dead; the fate of 10 is unknown. The percentage of recoveries is somewhat higher in cases of petit mal only. In addition to medicamental treatment, regulation of the child's physical and mental life and of his diet plays an important part in treatment.

Hemoptysis as Initial Symptom in Mitral Stensosis.—Warburg describes four cases in which hemoptysis led to examination. In no case was the diagnosis of mitral stenosis made on the first observation. In three cases, stethoscopy of the lungs showed changes that might point to pulmonary tuberculosis, but examination of the sputum and the roentgenogram failed to confirm this. The cause of the hemoptysis is uncertain.

Hygiea, Stockholm

94: 33-64 (Jan. 31) 1932

Operation in Ovarian Teratoma with Metastases: Case. G. Nordmark. —p. 35.
*Exophthalmic Goiter with Low Basal Metabolic Rate. A. Troell. —p. 45.

Exophthalmic Goiter with Low Basal Metabolic Rate.—In fourteen cases of thyrotoxicosis with a metabolic rate lower than plus 20 per cent, twelve presented the microscopic picture of a diffuse exophthalmic goiter and two were nodular goiters with the pathologic-anatomic picture of simple colloid goiter, the one, however, with practically all clinical symptoms of thyrotoxicosis. Troell says that, while these cases in no way lessen the requirement for examinations of the basal metabolism as a dominating factor in the diagnosis of toxic goiter, they show that a laboratory test alone cannot be decisive for the clinical diagnosis. Establishment of the diagnosis of thyrotoxicosis in these cases calls for pathologic-anatomic examination of the thyroid. Whether or not operative treatment is rational in cases without a certain pathologic-anatomic rate, only experience can determine.

Ugeskrift for Læger, Copenhagen

94: 123-144 (Feb. 4) 1932

Results of Treatment of Syphilis. E. Lomholt.—p. 123.
*Tonsillogenic Thrombophlebitis with Septicemia: Case. O. Moltke. —p. 129.
*Etiology of Postanginal Septicemia. J. Holm.—p. 132.

Tonsillogenic Thrombophlebitis with Septicemia: Case.—This instance of sepsis following an angina, with primary focus in the left tonsil and secondary focus in the left internal jugular vein, is believed by Moltke to be a so-called postanginal sepsis. He says that the septic symptoms may also appear during the angina and that the condition must be sharply distinguished from "septic angina."

Etiology of Postanginal Septicemia.—Holm reports two fatal cases resembling Moltke's, in young persons previously well, in whom, after an angina, purulent thrombophlebitis set in in the left internal jugular vein, with resulting septic infarcts in both lungs and sepsis. As the only cause of the condition, strongly anaerobic gram-negative rods were demonstrated.